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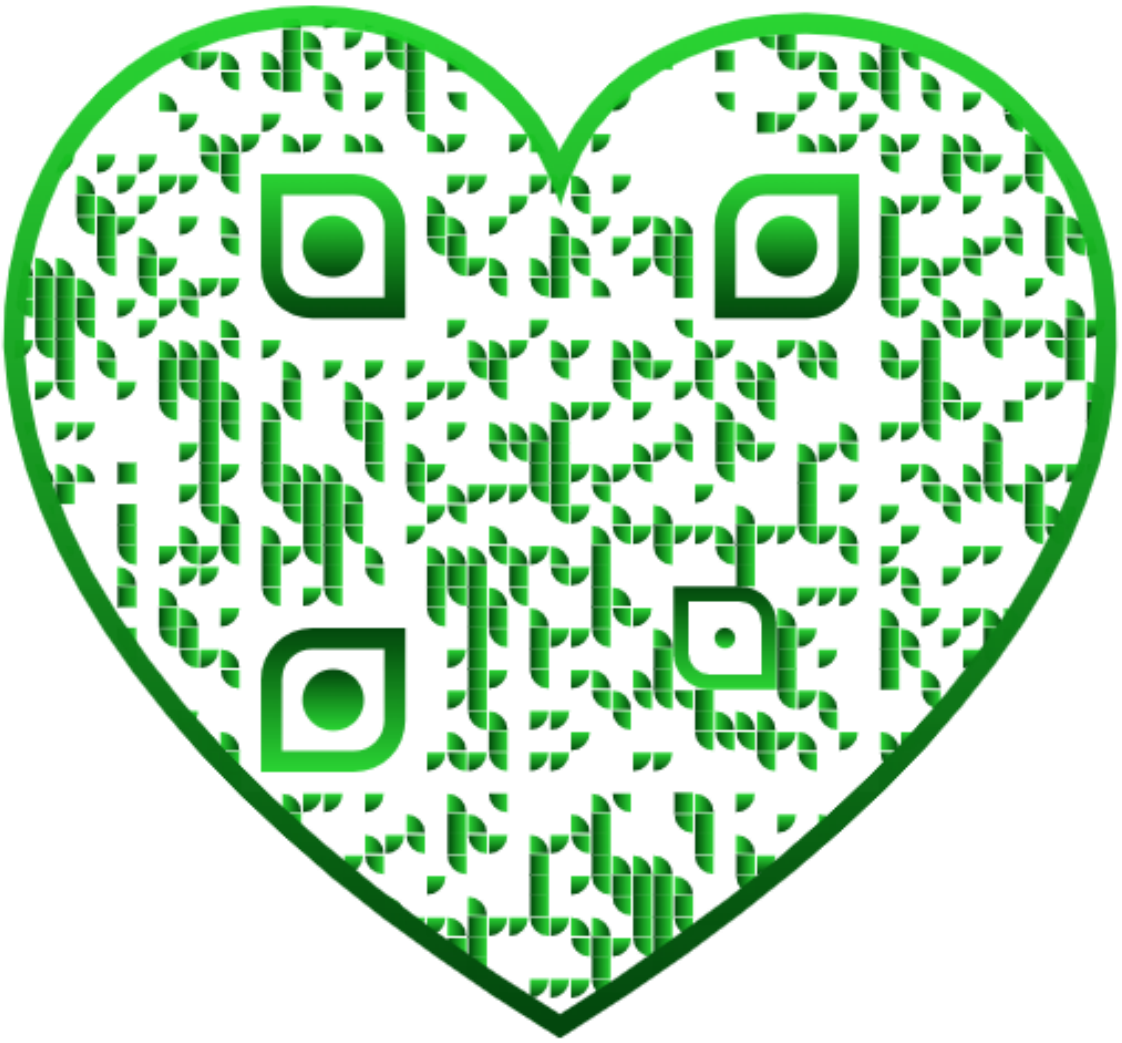

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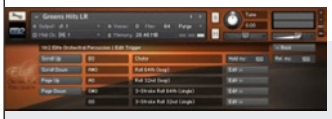

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KEYBOARD (ISSN 0730-0158) is published monthly by NewBay Media, LLC 1111 Bayhill Drive, Suite 125, San Bruno, CA 94066.

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Periodicals Postage Paid at San Bruno, CA and at additional mailing offices. POSTMASTER: Send address changes to KEYBOARD P.O. Box 9158, Lowell, MA 01853. Canada Post: Publications Mail Agreement #40612608. Canada Returns to be sent to Bleuchip International, P.O. Box 25542, London, ON N6C 6B2.

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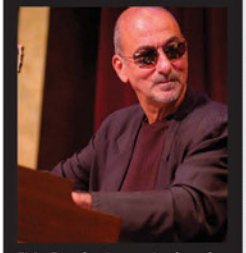

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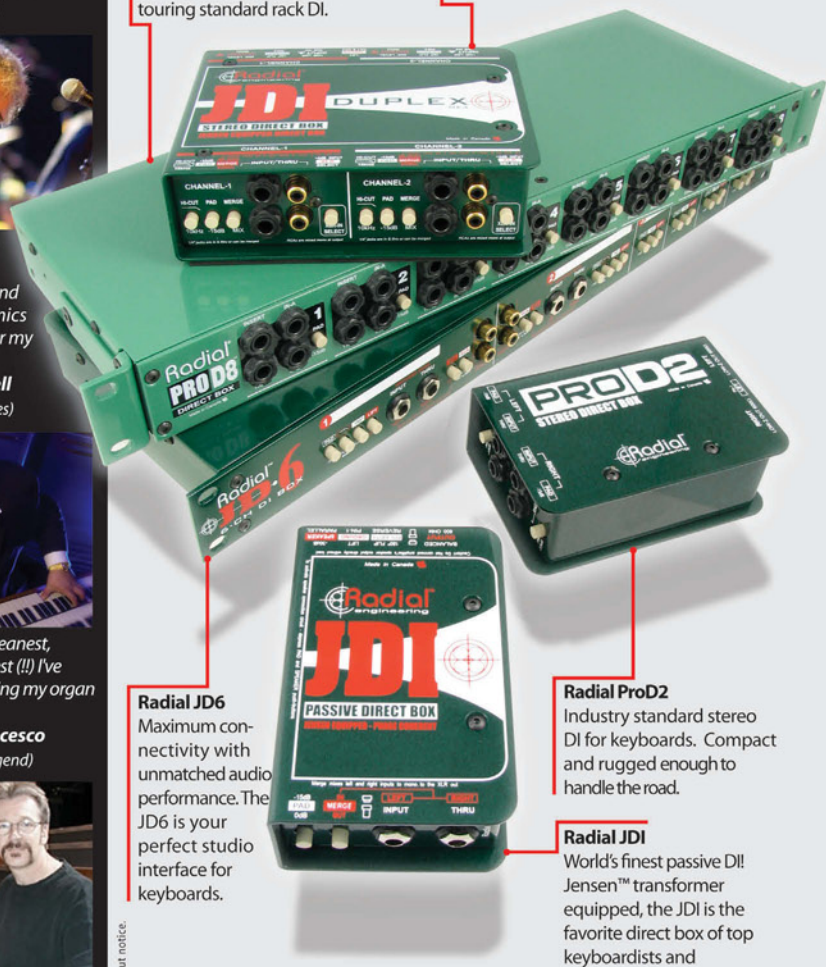

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VOL. 39, NO. 03 #444 MARCH 2013

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Editor's Note

The words "If I were you, I'd . . ." raise my deflector shields faster than a fleet of no-forehead Klingons. You too? Especially if the well-wisher is ignorant of some central challenge of your job over which you have zero control, right? I recently received such guidance from someone who thought magazine editors should have "edgier" opinions. What could be more appropriate than to satirize this newfound edge in the form of my own unsolicited advice for the keyboard industry? A lot of things, probably, but here goes. . . .

Casio, the Privia and XW lines have proven you can make world class instruments at affordable prices, and exorcised the jurassic stigma of department-store cheapness. Now that it can't hurt you, give it a nod: Make a keytar for ironic hipsters. Make it the DeLorean of keytars. But make it with aftertouch (like the AZ-1) for those of who want more than irony.

Hammond, your stuff has improved by magnitudes since the '90s. I use it, I love it, and I'll do any gig with the little SK1 as my sole drawbar organ. For your next quest, seek ye beyond the Shire for two mysterious mad wizards who both answer to "Guido," and pay them to develop exclusively for you.

Korg, the multiple synthesis engines you've been working on since I had my first OASYS PCI card now have the horsepower they deserve in the Kronos. But your bread-and-butter HD-1 sample engine, while good, needs to catch up. More sample layers per oscillator! More ways for them to switch and play clever articulations!

Kurzweil, don't try to beat those who own the vertical stage piano market at their own game. Elitist appeal was always your strong suit—the top K2500 was even called the Audio Elite System. Make VAST visual, assemble huge sample sets and amounts of DSP, skimp on no converter or op amp, and give us a workstation whose front panel we'll read to ourselves in a Robin Leach voice.

Moog Music, make a polyphonic heir to the Memorymoog already. I don't care if it's the price of a new Prius, and neither will Jordan Rudess. Because we'll both just ask you for a loaner.

Roland, you've always been driven by a spirit of looking forward, never back, but re-issue the TR-808. Even if it can't use the exact same analog components, you'll have a chunk of cultural mindshare—not to mention cash—that's too big to fit into a NAMM show.

Yamaha, you've taken sample-based subtractive synthesis to new heights—the Motif XF is (among other things) the Emulator that E-mu never made. But a lot of us loved all those *other* synth engines you developed in various instruments, then combined in the EX5, then turned into PLG expansion boards for the Motif/ES, then . . . discontinued? The other time I was that bummed was when AMC killed *Rubicon* after one season.

See, it's obnoxious to be a Monday morning quarterback. Fortunately, making that point was my sole purpose, and I'm sure everyone is having a good laugh abou— Hey, why is our office park security dressed in full tactical gear? And coming this way? Hopefully they're looking for the hacker who must be jamming my cell phone. Hi guys! Wait, what do you mean, "step away from the computer". . . ?

Stephen Fortner
Editor

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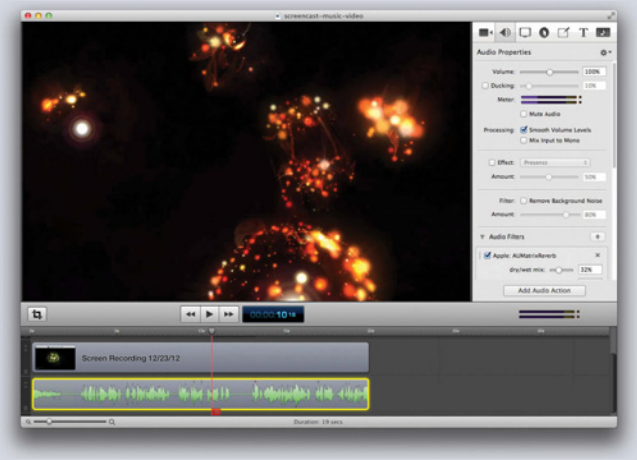
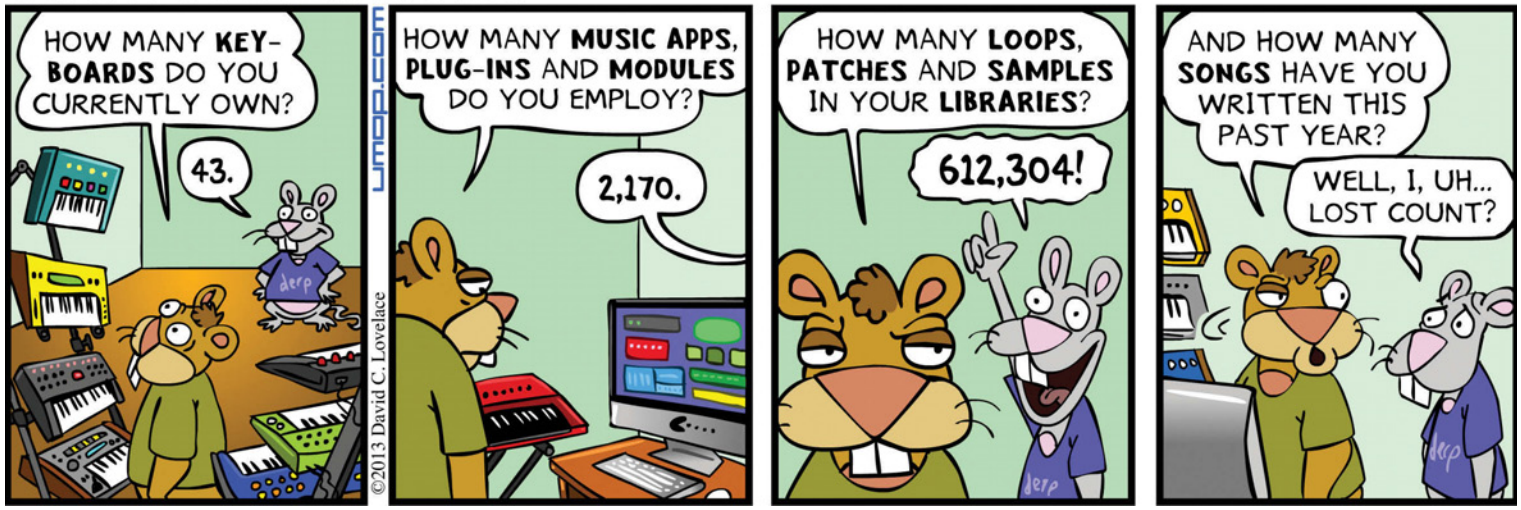


Key Secrets

Look Before You Beep

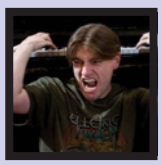
It's interesting how people in fields related to music, but not music proper, solve creative problems. ScreenFlow (telestream.net, $99) is Mac software for capturing onscreen action, but it has some cool audio features too. You can record the iTunes visualizer playing your music to make an instant music video. Click on the timeline, select "Insert Speech Clip," paste in some text, and ScreenFlow renders the words as an audio track. Click "Add Audio Action" and you can apply unique effects to sections of a track, adding reverb to a single word, for example. The video side excels as well: I find editing is much faster than on iMovie or Camtasia. David Battino

the PACKRAT™

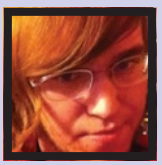


FACEBOOK POLL

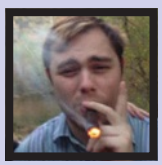
Q: Who has mined their main synth for every drop of sound and functionality it has?



Jason Kresge
I've had my Kurzweil PC3X almost four years, but I still feel like I've only scratched the surface. It's so deep and powerful.



Jacob Hunt
I've thoroughly explored all seven of the sounds my Moog Source can make.



Wesley Dysart
I'm still rocking the first-gen Roland V-Synth and loving all the expressive potential. It's my secret weapon in a world of soft synth producers.

David Athon
I use a Roland AX-Synth as my sole board in my band, and even though it's limited compared to mainstream professional 'boards, I discover new ways to play it every time I pick it up!

My First *Effected Piano*.

Marco Benevento

"It all stemmed from demos on my laptop," says mad keyboard scientist Marco Benevento, describing his penchant for pumping acoustic piano through guitar effects. "I put a little tremolo here, a little delay or distortion there, on tracks I'd already recorded. But when I was gearing up to tour my first record, it occurred to me—how am I going to get the piano to sound like that live?" The answer was just inches away. "I opened up a drawer in my desk and pulled out this crappy $40 transducer guitar pickup that didn't even really work," he recalls. "As an experiment, I stuck it on my piano, ran it through a Silvertone amp, dialed in some tremolo, and just melted in my chair. 'Oh my god, I got it!'"

Since then, Marco's live rig has grown to include multiple effect pedals, as well as amps onstage, all processing sound from the hot-rodded, 61-note, 1927 acoustic upright piano he plays. He now uses five higher-quality pickups to capture the full range of the piano's soundboard. "I can be as loud as the drummer, and the drummer can be right next to me," he laughs. Marco's latest album is *Tigerface*.
| **marcobenevento.com** | Michael Gallant

NEW GEAR

BY STEPHEN FORTNER

CASIO PRIVIA PX-5S

WHAT Stage piano meets all-around gig synth meets four-zone controller. **WITH** Premium AIR piano sound from PX-350 (reviewed Jan. '13). New EPs and Clavs with release samples and amp modeling. Hex Layers like the XW-P1, but with improved "other" sounds (orchestral, synth, etc.) and new filters. Four programmable arpeggiators and eight-track phrase sequencer. All knobs and sliders assignable to any internal or external parameter, with independent USB and MIDI I/O. Four simultaneous insert effects. **WHY** Our early impression is that this thing is meaningfully competitive with piano/synth keyboards a price bracket or two uptown—seriously. **$1,299 | casiomusicgear.com**

HAMMOND SK1-73

WHAT A 73-key version of the SK1 organ. **WITH** Hammond's latest improvements to their tonewheel and Leslie simulations. All the extra non-organ sounds of the SK1 and SK2—sounds we reviewed favorably—with the same facility to do splits and layers on the fly. New acoustic piano and Wurly sounds, too. **WHY**. If the SK1 feels too cramped and the dual-manual SK2 isn't right for you, this is the "Goldilocks" size for getting through your gigs with a single compact axe. **$2,395 street | hammondorganco.com**

NORD ELECTRO 4 SW73

WHAT The Electro 4, only with 73 ebonies and ivories. **WITH** Semi-weighted waterfall keys. Twice the memory of the 73-key Electro 3: 380MB for Nord Piano Library sounds and 128MB for Nord Sample Library sounds. Organ and rotary modeling upgraded to the same as what's in the Nord C2D, their flagship organ. MIDI over USB. **WHY** If only an Electro will do, you can now get the latest model with a keybed that's comfortable for stretching out on piano and EP. **$2,699 | nordkeyboards.com**

WAVES ELEMENT

WHAT The first soft synth from Waves. **WITH** Two oscillators per voice. "Virtual Voltage" modeling for fat sound and authentic analog emulation. Integrated 16-step sequencer and arpeggiator. MIDI learn for everything. Built-in effects. **WHY** If it's even half as good as Waves' notoriously perfectionistic audio plug-ins, it'll be a force to reckon with. **$200 | $99 introductory price | waves.com**

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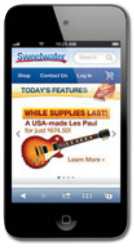

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Junkie XL TALKS SHOP

HARPER SMITH

BY STEPHEN FORTNER

Tom Holkenborg, known to his fans as Junkie XL, is one of those rare artists who truly merits the oft-used praise "Renaissance man." His main entrance onto the world stage was his 2002 remix of Elvis Presley's "A Little Less Conversation," and since, he's done official remixes for Coldplay, Madonna, Justin Timberlake, Michel Bublé, and countless others. His composing talents have yielded original electronic dance music that keeps the critical listener engaged even as it draws the ravers in droves; an 18-year-long list of scores for top-selling video games; and collaboration with Hans Zimmer on such films as *The Dark Knight Rises*, *Madagascar 3*, and *Man of Steel*.

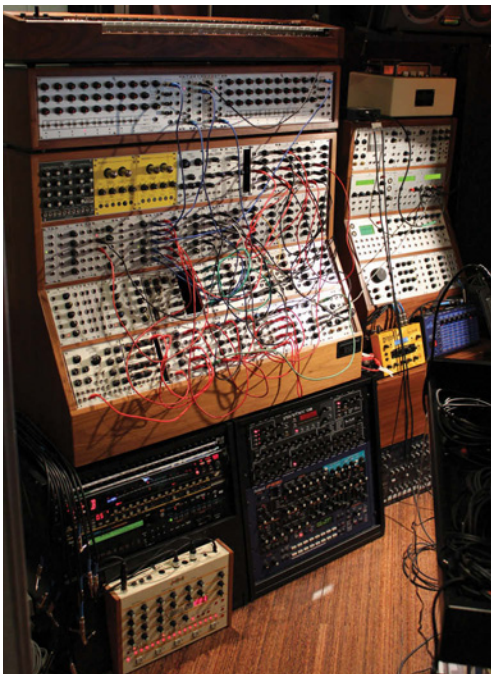
HIS LATEST ARTIST ALBUM, *SYNTHESIZED*, IS A MICROCOSM OF HIS STYLISTIC diversity and work ethic. There are club stompers, to be sure, including the title track, the hard-trance "Klatshing!," and the dubstep-tinged "Leave Behind Your Ego," which features samples of Timothy Leary speaking. There's through-composed songwriting, as on the gorgeous "When Enough Is Not Enough," sung by Curt Smith of Tears for Fears. There's the Datarock collab "Gloria," a flat-out rocker that pays seeming lyrical homage to the same young lady the Doors encountered—or maybe her daughter. There's Isis Salam rapping a forthright defense of partying over the reggae grind of "Off the Dancefloor," and the opening and closing tracks are lush ambient soundscapes evoking Tangerine Dream or Vangelis. If there's a commonality, it's the *sound* of the thing: analog synth heaven from top to bottom.

On the cover art for the new album, you're right there with a synthesizer—not a laptop, DJ rig, or roomful of ravers, but a keyboard. Is there a statement there?
There is. Every sound on the album has been somewhat synthesized—obviously synthesizers themselves but also sound design on acoustic drums, bass, and guitars. It also refers to how people now seem to live a synthesized life. It feels different than 15 or 20 years ago when people actually hung out. Now a lot of it is through social media without people being together at the same time. So having a synthesizer on the cover goes to many different levels.

Unlike a lot of electronic records today, this one sounds very *played*—almost like you'd recorded on tape and had to capture song-length performances.
Well, I fell in love with electronic instruments from the start. I listened to all the Trevor Horn productions when they came out, and I loved the electronic approach before dance music started. In the '80s, I started working in a music store, selling all these instruments and that's when I really fell in love with it. But before that, I was a drummer, a piano player, a guitarist, and a bass player, and there was no room for you in any band if you weren't great at what you did.

I'm trying to find a balance because with plug-ins and software, you can do stuff beyond your wildest dreams, but there's something about sitting behind a drum kit, playing for five minutes, and really nailing a performance, and I think that's overlooked a lot. Translating that to the keyboard world, you can perform a piece on a synth whether you're physically able to *play* it or not, but entering the notes and turning the knobs creates a performance that's "between brackets"—even if you correct it and speed it up later. That's different from many of my colleagues who've only made music in pattern-based computer environments where they copy-paste things they've done.

Was there an "aha" moment when you knew you wanted to play synths and samplers?
That moment was when the Atari ST that had built-in MIDI came out. It was when the Roland D-50 came out. It was when the Yamaha DX7 II came out. It was when Kawai started making really interesting synthesizers. It was when Korg was picking up on it and making workstations. You'd go to NAMM, and every half a year it was insane what the new instruments were capable of. Now, it's hard for developers to come up with something that's actually new. It seems like most of the effort nowadays is aimed at better and better emulation of acoustic instruments. In the '80s, a lot of synths were based on the fact that you could make sounds nobody else could.



An Analogue Systems French Connection controller with its Martenot-style sliding ring tops racks of modules from Analogue Systems, Metasonix, Wiard, and others in Junkie XL's studio. Below are a Novation DrumStation, Roland XV-5080, Jomox XBase 09, and Dave Smith Prophet '08 above a Roland JP-8080. At far lower right, we can see a Dave Smith Mopho and Evolver and a Korg MS2000R.

Giant rack of mostly Studio Electronics synths, top to bottom: Two MIDImoogs, two MIDIminis (a later model), SE-1, and CODE. At bottom is a Cwejman S1 semi-modular.

***Synthesized* is all over the map stylistically. Did making a record that's hard to pigeonhole present any challenges?**

This album is such the weird sheep of the pack, so to speak. I know I'm probably taking a commercial hit with it, but I also do so much film and video game scoring that I was able to treat *Synthesized* as a creative challenge, rather than a commercial one of maintaining my position on the dance floor. I talked about this a lot with one of my best friends, who was actually A&R-ing this album, and he said, "What if we kicked your record shelf really hard and a couple hundred records fell out from the 10,000 that are in there, and we just saw what landed on top of what? If a techno record from '95 landed on a record from ABBA landed on an Ennio Morricone record from '67, what would that bring you?" That basically turned into the title track. It's a disco beat. It has a hard techno line you'd hear in the mid-'90s, but it has all these other vocals and these Ennio Morricone guitars and melody lines.

How did you create the lush string lines and pads in the breakdown to "When Enough is Not Enough"?

Most of the pads were made with my analog synths. What I really like are the 8500 and the 3500 [modular] synths by Analogue Systems. They're monophonic, so to create a chord, you record several passes. That's what I did on that track and others. For instance, "The Art of Luxurious Intergalactic Time Travel" where the synths were basically recorded three, four, or five times to create the full chords. One of the beautiful things about programs like Pro Tools and Cubase is that they make it so easy to do that.

Do you always construct polyphonic parts one voice at a time?

Well, usually I create a rough demo with sounds I like from plug-ins. So I'll take a patch called "Warm Pad" or something, and I'll play the chord progression I want with rough filter settings. Once I'm happy with the song structure, I split all those notes out to individual monophonic lines and start playing with the modular synths to get a sound that has more character, and then I record pass by pass. And with DAWs, you're not losing any sound quality, so you *can* take pass after pass. You don't need a wall-to-wall modular setup to do this, either. It'll take time, but that's the beauty of electronic music—you can do everything yourself and take time to get the sounds you want.

So, do real analog and modular synths always replace plug-ins in your tracks?

Sometimes yes, sometimes no. If you take the Arturia Prophet and just use the presets, you might as well use the original. But the cool thing about Arturia is that they can modulate so many parameters at once. When you start doing all these cross-modulations, you may get a sound that's impossible to make with the original. On the other hand, if you do a quick bass line in [Native Instruments] Massive, that plug-in has a distinctive quality, and if you want that, you want Massive. But if you just wanted a percussive bass line, then you may get more depth, punch, and so on out of the analog world.

There's also a difference between a sound being impressive when soloed and sitting properly in a mix. . . .

That's right. Sometimes you program a sound with a soft synth, then when you replace it with an analog synth, it sounds *too* full and loses a certain quality. I have the Moog Voyager XL and it's one of the best synths ever built. But not every bass sound off it is the best bass for every track—sometimes the track needs something from Native Instruments FM8. So it's not like "analog is warm" and "digital is hard"—it doesn't work like that. You have to go track by track and think whether [an analog synth] is going to make your track better.

What do you think about the boost that analog synths have gotten from the EDM scene?

I love the injection the medium has given this whole industry. If you look at Moog, Analogue Systems, Synthesizers.com, Dave Smith, and so many others—these are all people that spent a lifetime making something that, in their own world, was the best possible thing it could be, and I love that attitude. Go to NAMM and you'll find somebody who makes just one pedal. It's called Something Fuzz and it's their life's work. More of those companies can thrive now because of EDM becoming so big and electronic producers actually making money and saying, "Let's buy a real analog synth and see if I can make something special."

When creating synth parts or repeating motifs in a song, do you play in the lines on a keyboard, sequence them with a pencil tool, or something else?

I consider myself a crappy keyboard player, but it's amazing how I get certain things done on a keyboard. There are many other occasions where I come up with a synth figure or bass line or arpeggio that I wasn't able to play on the keyboard. Sometimes I pick up a guitar, play a lick, and think, "Oh, this should be the basis of the song." Sometimes I program a bunch of notes in the step editor and move them around with surgical precision. I try to find a balance, and here's the sad part: I think a lot of musicians limit what they *compose* to what they can *play*, especially guitarists and traditional keyboard players. It's like language. It's not that Shakespeare is using a

Junkie XL's Favorite Production Techniques

In His Own Words

Key Input Compression. Also called sidechaining, this started out as a simple tool to make mixes clearer. Every time the kick drum hit, the bass guitar would get slightly quieter, or the guitar solo would duck the other guitars a bit. Now in dance music, every time a kick hits, all the keyboards and basses go right to zero and then it pumps back up and you get this exciting sound. It's been overused, but I still like it. If you want specific instruments to duck or pump when the kick drum hits, route them all to a subgroup—keys and vocals are common choices. Put your compressor plug-in on that subgroup and specify the kick track as its sidechain input.

Sidechaining Isn't Just for Kicks. Let's say that for whatever reason, you don't want to mix a lead vocal track too loud overall, but still want it to be heard well. Use the vocal as the key input for a compressor on a subgroup for guitars, synths, or whatever instruments you feel are getting in the vocal's way. Then, those will back off when the vocal is present.

Parallel Compression. Say your drum track needs more energy. Duplicate the track (or group track if it's several drum tracks you've thrown to a subgroup)—things will temporarily be twice as loud. Compress the s*** out of the second track until it's really pumpy, then turn it down to nothing. Now, fade it in to taste behind the uncompressed track and you get a very rich sound without losing the attack or definition of the original.

Mono/Stereo Compression. Some things in your mix are always mono—the kick drum, maybe or the snare, probably your bass sound. Others are very stereo, like synths, vocals, or drum overheads. Brainworx makes a plug-in that can detect and compress mono and stereo information separately. [*Look for the BX_XL or the simpler BX Boom plug-ins –Ed.*] Put this on your mix bus or drums subgroup. You need to experiment a lot, but this can be a powerful tool to clean up mixes.

Multi-Band Compression. I usually use TC Master X for this. My low band goes up to 65 or 70Hz, my midrange band up to 2kHz, and the high band is above that. This way, I can compress frequencies where things starts piling up and need cleaning, while keeping the overall mix sounding tight and loud.

Parallel EQ. This works like parallel compression, except it's for a track has too little of a frequency you want or an instrument that needs more excitement. Duplicate the track, solo the duplicate, find the frequency you like, and don't be afraid to give it an extreme boost, as you're just using this track for fading in behind the original.

Mono/Stereo EQ. Brainworx also has plug-ins that let you EQ mono signals separately from stereo ones in the same program. So if you have a stereo drum loop and think the kick and snare need more punch, you can EQ that in without ruining the overall sound.

Creating Bass Drums. To get unique sounds for the all-important kick drum, I layer different drum sounds and synth patches. To cover the sub-bass end, I use something like a TR-808, 909, or similar kick sound. I put samples on top, whether it's me hitting an acoustic kit or a sample from a record, and therefore I create a character but I have the low end to support it. I usually run three or four channels worth of this layering into one subgroup and then use the compression and EQ techniques we've discussed here.

At arm's reach, clockwise from left, are a Tom Oberheim SEM Pro, Moog MuRF, Minimoog Voyager, Access Virus TI, custom touchscreen, iPad in an Alesis iO Dock, and Doepfer master keyboard.

different English than we are, he's just putting the words in a certain order that makes his stuff as great as it is. Sequencers like Cubase and Pro Tools give you every opportunity to put things in that order.

What challenges are inherent to composing for video games?
Video game scoring is a completely different animal from film scoring or making your own album. Film is a horizontal experience, a linear story, so the music is linear. A video game is a vertical experience that goes up in levels, and the music needs to be interactive. You not only have to come up with great sounds and themes, but you really have to know the audio engine a game company uses—whether it's the onboard audio engine of any of the consoles or their own algorithm.

Let's talk a little bit more in depth. The game starts and you hear some sound design thing, and when the player gets more active a rhythm comes in but the sound design is still there. You level up, some ostinato strings come in, and the sound design recedes to the background. You're attacked from behind—big drums and orchestra! You shoot the guy, they stop, it goes back to the sound design stuff, but the music starts creeping in again. So, one way of dealing with all that is by mixing multiple 5.1 surround stems that can all be heard at once but also in various combinations. That's one system.

Another system uses markers. Basically, there's one massive audio file—stereo or surround—and again, the cue starts with the sound design. When the game gets more tense, calling for a little percussion maybe, it skips to some marker in the audio file where you find the sound design plus that percussion. But so you don't hear the skip, it first jumps to a transition file, then to the marker. So for one little level that needs five minutes of music, you might have to create an interleaved sound file 50 minutes long that has all the different levels of intensity, the overlay sounds to mask the transitions, and so on.

When you perform live or spin a DJ set, how do you present the music and what gear is involved?
I've never been a DJ. I tried to put two records in sync 15 years ago and it took me ten minutes! [*Laughs*.] I just play my own music live. I was recently going through some old pictures—I had an Allen & Heath 40-channel mixer, three racks of synths and samplers, a couple of [Akai] MPC2000s, and I was sequencing the whole thing live. It was extremely expensive to fly with, and after 9/11 it wasn't like you could roll into an airport with all that gear and say, "I've got to be in Vegas in two hours." Luckily, gear started getting more efficient around the same time, so I could tour with a smaller setup. From 2003, I used a Yamaha AW4416, which was a multitrack hard disk recorder with a built-in mixer, and I had laptops running sequences alongside it. Later, Ableton Live came out, and for me, *that* was the solution.

DJs have also moved to laptops, though. So now, whether you see me playing my stuff or Armin van Buuren or someone DJing, it looks the same, but there's a massive difference. I have all my clips and can cross-combine things. I can take a drumbeat from one song and combine it with the bass of something else. I can choose different synth sounds, or mute the vocal, or take a vocal from a different song and do a mash-up on the spot, and that's the beauty of using Live.

You teach at a university called ArtEZ in Holland. If I were to sign up for your course, what sort of homework would I have?
The course covers electronic music in its broadest form. Some kids want to be a sound designer or film composer. Some want to do electronic music as an art form—museum installations and things like that. Or, they want to be the next big DJ or dance music producer. The first year, you have required courses and after that you can specialize yourself. I actually set up the whole curriculum. It's modeled on Berklee in Boston in terms of the level of study and the amount of time you need to invest. We started eight years ago. Now we have students from all over the world, China, Europe. It's very inspiring to see these kids.

Who *haven't* you collaborated with yet that you'd most like to?
Adrian Belew, David Bowie, and Ennio Morricone.

Those are great choices. Why those three?
If we look back to King Crimson, like, '81 to '85 when they did albums like *Discipline* and *Three of a Perfect Pair*, to me that's guitar playing on a whole different level. What Belew did on "Elephant Talk," when you see him do that live, you're like, "Holy s***!" And he just does it with a couple of pedals. I chose David Bowie because of his unique taste in the music he writes. We're looking at a guy who's influenced music for 40 years at least. Ennio Morricone is for me the king of film scoring. His experimentation in the '50s, '60s, and '70s was really out there. When he first wanted to use electric guitar in a Western, someone probably told him he was out of his mind. But that wound up defining the sound of Westerns. It's like if you and I scored a sci-fi movie with just an accordion and an Irish flute—that would be awesome! [*Laughs*.]

What keyboard players have specifically inspired you?
I'm a massive fan of Jean Michel Jarre and Vangelis—the *Blade Runner* score is one of my all time favorites. If you're talking about a *player*—someone who sits down at the keyboard and just amazes you—there's Keith Jarrett. When you see him play acoustic piano and do all the stuff he does, it's mind-boggling. But to me who was really interesting was Herbie Hancock when the album *Future Shock* and the single "Rockit" came out. For a guy with a jazz background like his to do an electronic album like that, and for it to become the blueprint for all the "beat" guys? That was amazing!

Slide show of many more gear pictures from Junkie XL's studio.

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Tom Coster

VITAL INFORMATION FROM A MASTER OF FUSION

BY JERRY KOVARSKY

TOM COSTER IS NO STRANGER TO *KEYBOARD*. FIRST PROFILED IN 1977, HE wrote our Rock Technique column from June 1979 to June 1985. He's been a go-to expert for evaluating gear and for his wealth of musical and technical experience, honed through his eight years with Santana, gigs with Billy Cobham, Terry Bozzio, Gabor Szabo, and Joe Satriani, and his current and long-standing role in virtuosic fusion band Vital Information. Founded by Journey drummer Steve Smith, Vital is now celebrating its 30th anniversary with the release of *Live! One Great Night*.

You joined Vital Information about three years into its formation. How did it come together?
Steve Smith originally put Vital together with friends from Berklee College of Music: Tim Landers on bass and Dave Wilczewski on sax. As we became friends we resurrected the band, because when [Steve] joined Journey, well, a band like that takes all your time, so Vital Information took a back seat. We played some gigs together

Vital Information's current lineup, left to right: Vinny Valentino (guitar), Baron Browne (bass), Tom Coster (keyboards), and Steve Smith (drums).

and Steve liked the addition of keyboards, so I've been the keyboard player ever since.

The band has gone through a couple of stylistic phases. Were those a natural evolution or related to personnel changes?
The amount of work Steve puts into Vital is incredible. He loves it because it's *his* band and he can do anything he wants. What I ended up being, and still am, is a principal writer. A great deal of our library is tunes that I've either written myself or co-written with other members. But as far as direction is concerned, you're right about personnel changes. Once [guitarist] Frank Gambale left, we got Vinny Valentino, who's more of a George Benson-type player and a very good writer. Frank is an excellent writer as well, but Vinny writes differently. And the way Baron Browne hears note placement, he's amazing in a rhythm section. I do a lot of organ comping, and I have to tell you, Baron's is phenomenal in how changes the stuff up every night. It affects how I play as a rhythm section contributor *and* as a soloist. This is why I love touring with Vital. It's because we can approach tunes differently every single night.

Coming from a jazz and improvising background, you don't like to play fixed parts?
Right, I couldn't do that. I did some of it in Santana, although Carlos and Michael Shrieve wanted some jazz flavors brought in alongside what Santana already represented to its fans. So I'm not going to say I had to play two- and three-chord tunes all night. I got to do a fair amount of improvising, considering. In that sort of superband, there has to be some restriction because you're dealing with millions of people who listen to your music. They aren't ready to hear a lot of change. The people who come to a jazz or fusion concert, on the other hand, want to hear musicians really get into playing their instruments.

With Vital Information, what's life like touring such progressive, dare I say noncommercial music?
I was hoping you'd ask that. The question is important for musicians who are striving to make their venture a reality: the struggle, the love, the desire to *be a musician*. The two people who probably work the hardest as far as setting up and tearing down are Steve and myself. Even at this level, in the States we travel in a van—we don't always get help. This year was special because Steve had two guys: a driver who also was a drum tech, and a sound engineer, Tyler Soifer. He did a remarkable job, because you can play wonderfully every night, but if the sound doesn't get to the audience in a musical manner, you've lost the war. I set my own keyboards up to this day, and I also take them down, because I want to make sure things are put away properly and nothing gets left behind. We know what we're getting into and we embrace it.

What advice do you have for balancing the rigors of the road and such demanding music?
The biggest thing is to do your homework. Before leaving on a tour with Vital, I'll go over all the music, and even though I've played it before, I'm trying to find out how to add something new and hopefully take it to another level. The other thing I do on the road is, every time I find a spot in the music I know I can improve on, every chance I get to look it over, I do. After the gig I don't just go to the bar and get trashed. If I'm lucky enough to have a beer because maybe I can sleep in until nine the next morning, then I will. But if there's a problem with the music, the first thing I do when I get back to the hotel is go over it. I'm there to play music—nothing else.

You initially didn't connect with piano, but when you tried the accordion, something clicked. What was it?
I didn't like my piano teachers, and I didn't want to study classical music. When I was young I started teaching myself how to play boogie-woogie. That's the kind of music I wanted to play, not realizing at five years old that you really needed to take lessons and learn much more. But when my parents took me to visit some friends, they let me try their accordion. I was fascinated that you could push a switch and alter the sound, and by how your touch felt in conjunction with the tone. Even though it's limited compared to the piano, the accordion was a natural transition to the B-3, and from there to the world of synthesizers.

You've been known for playing a music store worth of gear. Now, you play just a Korg Kronos. Why such a compact rig for a fusion keyboardist?
You have to travel very light. The money jazz and fusion bands make doesn't cover airline overweight charges. I think everyone wants more firepower in a smaller package, whether you're playing a Holiday Inn or on tour.

What do you take with you when you fly?
I'm very grateful for my relationship with Korg, who help me line up gear at gigs all over the world. So I just take my USB sticks, backups, and a small rack with a mixer, pedals and cords, and my accordion—that's it.

How did you adapt to using a single keyboard?
My touch is based on accordion, organ, and synth. I don't like weighted keys, especially for

my signature leads and organ, so the biggest challenge was moving to 61 keys. [The Kronos] doesn't come in a longer model that has a synth action, and I'd always used a 76-key synth for splits. Sixty-one is cool for organ, but where the complexity came about was when I needed those big brass sounds. When I select an electric piano on the Set List screen, I have to remember to go down an octave for my comping. So a big thing for me was remembering where each sound was on the keyboard.

While you still do some drawbar work, like the shimmering effect you've credited to Larry Young, you now vary your organ sound mainly by changing presets. Why?
When I was playing a real Hammond, I used the reverse-color presets a lot, so it's not that different. By setting up my most-used sounds in the Kronos, I can call them up super fast. Another cool thing is that I can program a sound with the Leslie already fast. So as I start crescendo-ing, I'll start changing patches. It sounds like I'm pulling drawbars because each change is fairly subtle, then by the time I get to the full drawbars sound at the height of my solo, the preset change ramps up the Leslie as well.

Do you prefer a joystick or wheels for pitch-bend and modulation?
Because the wheel was the only thing available for so long, I wondered what a joystick was going to be like, but I prefer it now. I can use the same controller to change the Leslie speed as I do to pitch-bend, whereas when I had a Korg CX3 organ, I used a footswitch. So the joystick has become an important all-around tool.

Do you monitor in mono or stereo onstage?
I insist on monitoring in stereo. I need to hear that rich, spacious sound via my monitors to play my best. What gets fed to the house, I have no control over.

While used copies of your solo albums from the '80s and '90s can be bought on Amazon and the like, none have been reissued. Will this great music ever see the light of day again?
The second album I did on the Fantasy label was one of my favorites [*Ivory Expedition*] and that came out on CD. That was some great stuff, and it really showcases the Moog Invader [*A lead synth system combining a Moog Liberation with a guitar stack and effects. –Ed.*] The later albums [*Let's Set the Record Straight*, *From the Street*, and *The Forbidden Zone*], I'm so grateful to JVC for letting me do those—the musicians on them are the best in the world—but they *are* hard to find. You can get some of them as downloads via my son's website, tommycoster.com. I could see if those albums can be licensed. Our current label *has* been asking me if there's anything I'm interested in having done! ♫

JON SIEVERT

THEN: Tom's rig in 1981, clockwise from foreground: Minimoog above Hammond B-3 customized by Bill Beer, Prophet-5 atop Yamaha CP70B electric grand piano, Moog Rogue, and Oberheim OB-Xa above Rhodes Mark I Suitcase.

NOW: Tom's current Vital Information rig: a Korg Kronos. "For many years I used the second-generation Korg CX-3 organ, but that's no longer available," he explains. "Fortunately, the Kronos has a CX-3 mode built in, it has my organ sounds, and they sound incredible. For the first time in my life, I can play the entire gig on just one keyboard."

Tom talks about odd time signatures, comping, gear, co-writing "Europa" with Carlos Santana, and much more.

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KYLE RIPPEY

Clay Cook (left) and Coy Bowles

Coy Bowles and Clay Cook

ZAC BROWN BAND'S KEYBOARDISTS UNCAGED

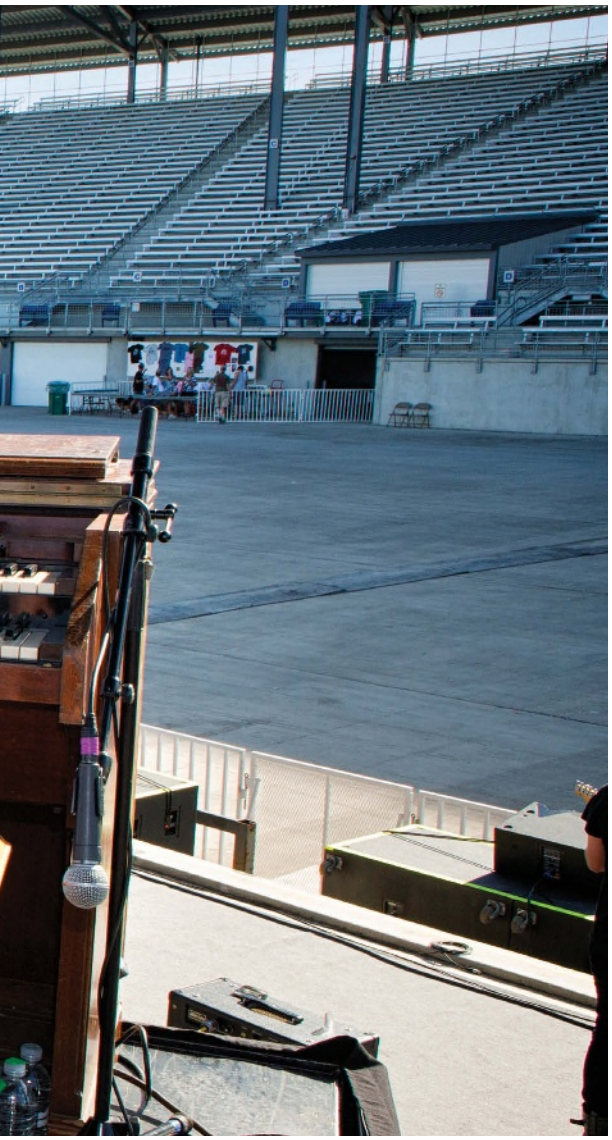
BY TODD AGUE AND TRACY COCQUYT-MCKERNAN

AS AN OVERNIGHT SUCCESS TEN YEARS IN THE MAKING, THE ZAC BROWN Band have continued their upward trajectory since winning the Grammy for Best New Artist in 2010. They've been touring steadily to support their third and latest studio album, *Uncaged*, which debuted at number one on the Billboard 200 its first week. *Billboard* calls *Uncaged* ZBB's "deepest musical journey to date." This is no small claim in light of the band's well known blending of country, jam band, rock, reggae, and bluegrass with powerful vocals to create a truly must-see experience.

Keyboard caught up with multi-instrumentalists Coy Bowles (organ, piano, guitar, banjo) and Clay Cook (piano, organ, guitar, mandolin, steel guitar, vocals) to get the low-down on sounds, deciding who plays what, why taking keyboards seriously can push guitar players further, and refurbishing a Hammond C-2 bought at a Goodwill store.

How do keyboards figure into your roles in the band, especially given that you both play guitar as well?

Coy Bowles: I was originally brought into the band specifically to play keyboards—out of necessity. They weren't my primary instrument, but I knew I could do this. I mean, we're not a 700-song variety band, and I knew that if I just practiced the parts, I could literally "fake it 'til you make it" by reaching beyond my current limitations. I'm fortunate to have very supportive



parents who instilled confidence in me, and that probably pushed me as much as my formal music training did. When I was younger, I used to see Dan Seifert play Hammond B-3 with the Lee Griffin band, a blues/jazz trio that's popular in the Southeast. Watching Dan was a big inspiration.

Clay Cook: I started out with basic keyboard knowledge—listening to Ben Folds' piano lines during my days at Berklee. I picked up much more on the road, though. I was touring with the Marshall Tucker Band at age 20, and Paul Hornsby [Georgia-based producer with Marshall Tucker and Charlie Daniels] was playing Hammond. I learned a lot from Paul, including New Orleans piano technique he picked up playing with Doctor John. The Marshall Tucker Band also did a tour with Little Feat, and being on the road with Billy Payne was a learning experience. I still think Payne and Chuck Leavell are *the* guys when it comes to piano.

How do you sort out who plays which keyboard parts for each song?

CB: For Zac's music, it depends on the *guitar* style needed for the song. Clay is a "chicken pecker" type guitarist who also has solid rock roots—Tom Petty and similar artists. I'm more of a slide/blues guitar player. So we first figure out what guitar approach works best for a song's style and genre. That determines who'll play the guitar part and who'll play keys, and whether that keyboard part will be piano, organ, or something else. Zac has cool guitar parts, and there are fiddle parts, too, so the keyboard focus is often on pads and dynamics.

CC: I'll usually look at what Coy's playing on guitar to figure out my keyboard part. Keyboards are often the glue—or really the "oil"—that holds an arrangement together. Sometimes it comes down to where you are when a song is put together. For the piano-driven ballad "Colder Weather," Zac and [songwriting partner] Wyatt Durrette had started writing the song together on the bus. Later, we were at Kid Rock's house and I was sitting at the piano when we worked up that song's arrangement, so that part fell to me.

How do you keep improving as keyboard players at home and on the road?

CB: For my own music, I often write material on piano first. That helps me stay focused on keyboard parts and my technique. Clay and I co-produced a record, *Love Takes Flight*, in 2011. The whole writing and recording process always helps me develop my playing. We came up with some nice B-3 parts on that record. Having the Nord Piano 2 will help me keep my chops up on the road, too.

CC: Our schedule on the road is busy. We're usually up early, and there are workouts and the "eat and greet" events with fans before the show. Sometimes we'll do jams at sound check before a show, and that's when I'll get some Hammond playing in. When I have a three-day run at home. I'll usually focus on guitar one afternoon and piano for part of another. It helps me to "play what you already know." I'm always trying to play and sing whatever AM Gold '70s songs I feel like—focusing on the voicings, the tension. The songs are mostly jazz-ish, but not jazz. There's a piano at the house, so I'll pick things out in difficult keys. This works well because Zac tunes down a half-step—so the songs are in keys like *F*♯, *D*♭, *B*, *E*♭, and *A*♭, instead of *G*, *D*, *C*, *E*, and *A*.

CB: The transposing saves Zac's voice. He's done this for years. Clay and I don't transpose artificially; we play the songs in the tuned-down key. Learning songs in keys like *G*♭, *E*♭, and others actually helps me dream up new scales and melodies. ♫

KYLE RIPPEY

Coy and Clay On Gear

Coy Bowles: In the early days, we had a chopped organ that wasn't cutting it on the road—we needed real legs for support. I found a 1952 Hammond C-2 on Craigslist, and drove past Rome, Georgia, to a Goodwill store in the middle of nowhere to meet with some guy who was trying to make a quick buck. I ended up buying it for $500, but it was noisy and looked terrible. I cleaned it up with wood filler and polish, and we took it to Nashville Pro Hammonds for a work-over. Our tech Murph put in new keys, drawbars, and Trek II percussion. It really came back to life! We use it on the road with two Leslies—a tall and a shorty so we always have a backup. The coolest part of the Hammond is that it drives the dynamics of the whole band. When I get loud, the band gets loud. It's like the guiding soul to everything. I wouldn't want to play without the C-2. If space were limited, I'd mike the Leslie and put it down the hall!

Clay Cook: Coy mainly plays Hammond, and I play more piano. We wanted something that sounded great and was portable, so we picked up a Nord Piano 2 to replace an older Nord Electro 2. It doesn't have the synth section from the Nord Stage, but we don't use that anyway. For gigs where we're renting backline, we'll use a Nord Stage 88 because that's what's available.

CB: Nords were the first keyboards we found that had nice, raw Rhodes and Wurly sounds. Everything we'd tried had that processed sound from 1981—until we plugged in the Nord!

Nurdy Tunes

MODERN MASH-UP MASTERS

BY STEPHEN FORTNER

WHAT HAPPENS WHEN YOU ASK A LIVE BAND TO PLAY THE ROLE OF REMIXER-meets-DJ, mashing up and reinterpreting covers of hip-hop and pop hits on the fly? At Summer NAMM 2012, *Keyboard* co-sponsored the Strange Arrange competition to find out. Bands were provided vocal tracks from the original artists, which were played back live as the musicians onstage did the rest. We caught up with keyboardist Tadarius "T-Ray" McCombs and drummer/arranger Sean Wright of Nurdy Tunes, whose seamless and very musical montage deftly injected the vintage video game theme from *The Legend of Zelda* into a menu of otherwise current pop fare, winning them first place and a recording session with R&B star Musiq Soulchild.

What got you into playing keyboards?
Tadarius McCombs: My family has always been musically inclined. I never really liked sports or playing outside and getting rough, so I'd always sit around and listen to music. I started on drums, but because my cousin was already playing drums I felt the need to try something new, so my mom got me a keyboard. It became something I love! Keyboards can do so much.

What keyboards do you play?
TM: I usually play a Yamaha Motif. Any type of Motif is fine with me. The night of the show I played two Motifs, an XF8 and an ES7. I also play a Korg Triton every now and then, or a [Roland] Fantom, but not usually.

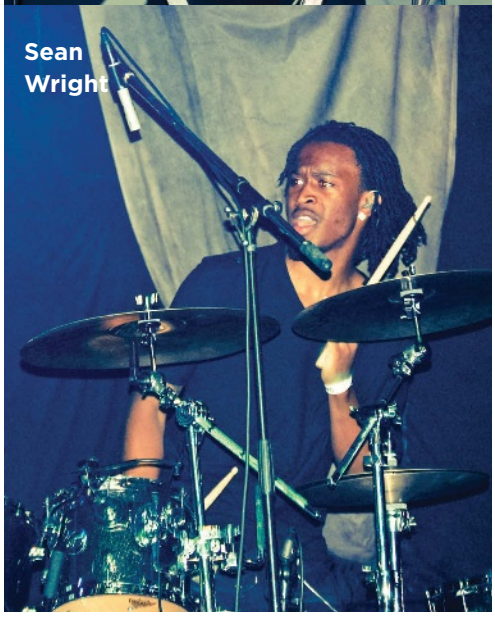
Who are your main musical influences and heroes?
TM: God first. My pastor, Marc Cooper, is an amazing keyboard player. He gave me the chance to really play and be heard. My big brothers DWayne Bennett, Joe Bethea, and Dave Chiverton are all amazing musicians. They're the reasons I am who I am musically.

For doing the live mash-up that won you the competition, how did you make the transitions between the songs smooth?
TM: [Co-keyboardist] Andwele Coore and I switched and traded sounds to fit each part during the whole process. While one of us was playing, the other could be lining up the next sound we needed. That's the amazing thing about keyboards—you can do so much to make anything feel good.

For the songs you had to arrange and mash up live, "I Kissed a Girl" by Katy Perry was chosen for you, but you got to pick the others. Any reason for your selections?
Sean Wright: Mainly because they were current. I also knew that "Cashin' Out" by Cash Out would be the best fit for the first song because it's heavily played in the South, and the event was staged in Nashville.

Was it just vocal tracks they gave you, and did you then have to play and arrange all the instruments around them?
SW: That's correct. I built all the musical ideas and sounds around the *a capella* vocals.

DJs do *some* of the same things you did—they string songs together, match tempos, blend two songs at once, and even add their own parts. Did this feel like "live DJing" to you?
SW: I doubt this experience will make me a better DJ, simply because DJing uses a totally different set of equipment. I think it *has* made me better at song choice, though, so maybe in that aspect. I have a better understanding of what people like to hear at what times and catering to that with my song choices all the way through a set. ♫



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January, 2013

electronic MUSICIAN EDITORS' CHOICE 2013

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5 WAYS TO PLAY LIKE Dave Brubeck

BY ANDY LAVERNE

DAVE BRUBECK, WHO PASSED AWAY IN DECEMBER 2012, JUST A DAY SHY OF HIS 92ND BIRTHDAY, WAS ONE OF THE MOST influential jazz musicians of all time. Rhythms of horses' hooves on the California cattle ranch he grew up on, along with those from water pumps, motors, and various other sources prompted his lifelong fascination with odd time signatures. Brubeck was also exposed to Bach, Mozart, Chopin, Beethoven, Debussy, and Ravel, as his mother gave classical piano lessons. Stride, blues, swing, bebop, classical, big block chords, and delicate counterpoint are just some of Brubeck's signature devices. Let's "take five" of them for a closer look. . . .

Ex. 1.

1. Blues

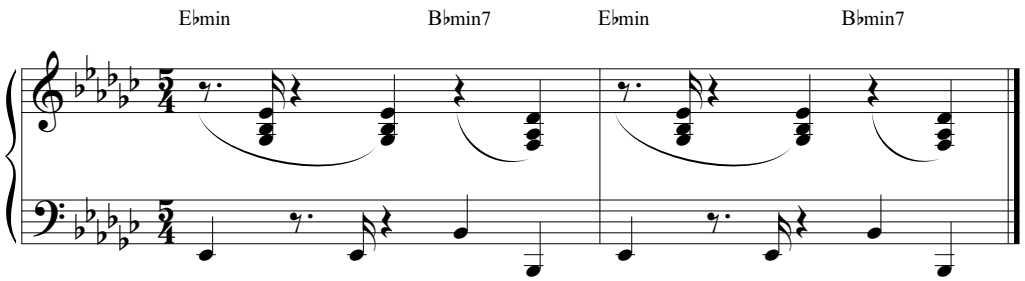
Many of Brubeck's classic compositions were based on blues progressions, like "Sweet Cleo Brown," a tribute to one of his great inspirations, blues singer Cleo Brown. Similarly, his solos were often infused with riffs drawn from the blues scale. **Ex. 1** is a progression Brubeck typically used to end a blues.

Ex. 2.

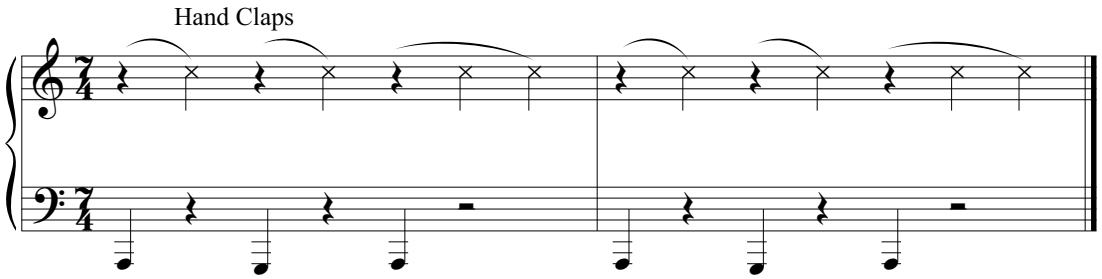
2. Stride

Some of Brubeck's heroes were renowned for stride piano, like Duke Ellington, Earl "Fatha" Hines, Fats Waller, and Art Tatum. Brubeck's large hands let him span big block chords with his right hand while playing wide walking tenths with his left. "It's a Raggy Waltz" combines elements of stride and ragtime in 3/4 time—one of his first forays into non-4/4 time signatures. Playing in 3/4 also let him superimpose another pulse over the beat—a polyrhythm—as in **Ex. 2**.

Ex. 3a.



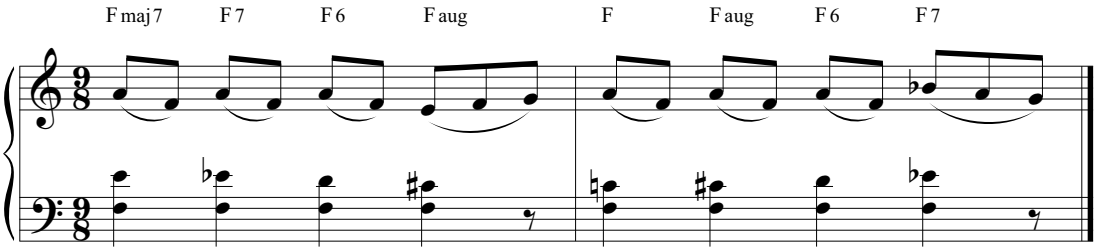
Ex. 3b.



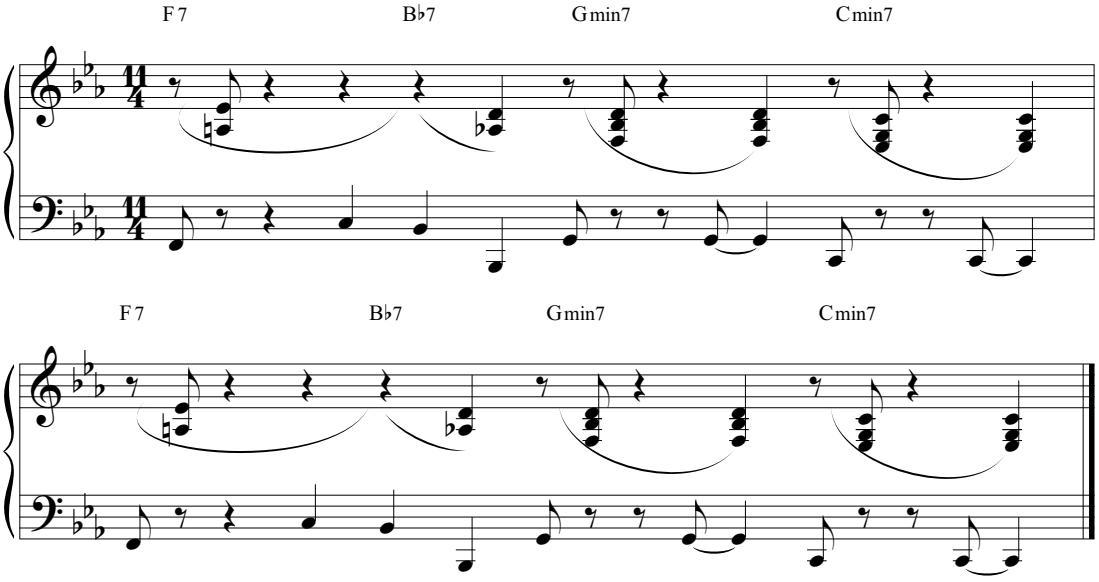
3. Odd Time Signatures

Brubeck once famously stated, "I don't think jazz should be in 4/4 time." His use of *metric subdivisions*—seen here marked in groups—was the secret ingredient that made odd time signatures sound natural and swinging to the causal listener. These broke up the measure into more digestible rhythmic phrases of (usually) two or three notes. For example, "Take Five" is more accessible when you count its 5/4 time as "*one* two three, *one* two." **Exs. 3a** through **3e** illustrate this approach in various time signatures.

Ex. 3c.



Ex. 3d.



Ex. 3e.

LaVerne on Brubeck

"I was privileged to get to know Dave Brubeck when I collaborated in the group BLT [Brubeck-LaVerne Trio] with his sons Chris and Dan. Like so many musicians, my first exposure to jazz was through Brubeck's quartet recordings. For this, I am truly grateful," says pianist and composer **Andy LaVerne**, professor at the Hartt School of Music in West Hartford, Connecticut. LaVerne has worked with Frank Sinatra, Stan Getz, Dizzy Gillespie, Chick Corea, and many others. Learn more in his latest book, *Chords in Motion*, from Aebersold Jazz, and at andylaverne.com.

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4. Polyrhythms

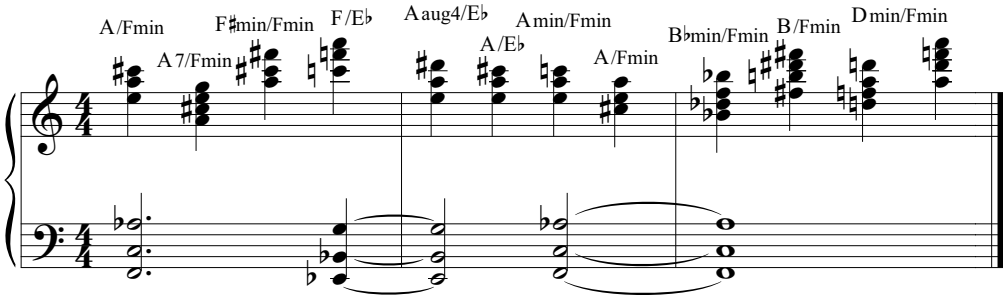
Ex. 4 demonstrates Brubeck's renowned use of *polyrhythms*, or playing in more than one rhythm at a time. The rhythmic grouping of five notes in the place of four is distributed between two hands, a technique that's been picked up by such pianists as Herbie Hancock and Chick Corea.

Ex. 4.

5. Polytonality

It was Brubeck's older brother Howard, chairman of the music department at Palomar Junior College, who first suggested he study with French composer Darius Milhaud. During those studies, Brubeck began experimenting with *polytonality*—playing in more than one tonality at a time. While Brubeck is well known for his frequent display of fast pyrotechnics and dense textures, **Ex. 5** exemplifies his use of space and openness.

Ex. 5.



Andy LaVerne plays Dave Brubeck's "In Your Own Sweet Way."

SOUNDCLOUD

Play-along audio clips for this lesson.

keyboardmag.com/march2013

Signature Tunes

New to Brubeck? Here's some required listening for getting to know his use of odd time signatures.

TIME	SONG	ALBUM
5/4	"Take Five"	*Time Out*
7/4	"Unsquare Dance"	*Time Further Out*
9/8	"Blue Rondo a la Turk"	*Time Out*
11/4	"Eleven Four"	*At Carnegie Hall*
13/4	"World's Fair"	*Adventures In Time*

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Be the Bass

BY FEDERICO GONZALEZ PEÑA

PICTURE THIS: YOU GOT THE GIG AND YOU'RE EXCITED ABOUT THE MUSIC. You get to your first rehearsal and the bandleader wants you to play "bass" on a couple of things. You panic because you've never had to be the bass player *and* cover your keyboard parts at the same time. I've been fortunate to play with some of the baddest bass players on the planet, and all of them have asked me to play bass at one time or another. To help be your own bassist, here are a few examples that will strengthen your hand independence as well as add some spice to your left hand. Always remember that as a keyboardist, you already use your left hand more than you know.

1. Pop Bass

Ex. 1 has a Pop feel to it. The *C* major chord is syncopated and falls right before beat 1 of measures 2 and 4, but there's a lot of space in the bass part, which should make things easy. Embrace the simplicity and concentrate on making it feel good. You can practice all the examples in this article by setting up a simple "two and four" backbeat drum pattern to play over.

2. Rock Bass

Ex. 2 follows the same pattern as in Ex. 1 but now we're adding a *straight eighths* rock feel on measures 2 and 4. Notice how this helps propel the rhythm forward.

3. R&B Bass

Ex. 3 is another variation on the same pattern. The busier bass line here is beginning to imply a more R&B or funk kind of groove. It's a bit counterintuitive, but notice how the more syncopated the pattern becomes, the easier it is to play.

4. Syncopated Bass

Ex. 4 introduces more syncopation to the mix. Here, both hands play the first two beats of measures 1 and 3 simultaneously. Make sure to respect the staccato markings to maximize the funk factor.

5. Funk Bass

Ex. 5 is full-fledged funk. The right hand is syncopated in the style of Roger Troutman's guitar on Zapp's classic track "More Bounce to the Ounce." Notice how the bass line plays "in the cracks" of the groove, which is the key to making this pattern feel good.

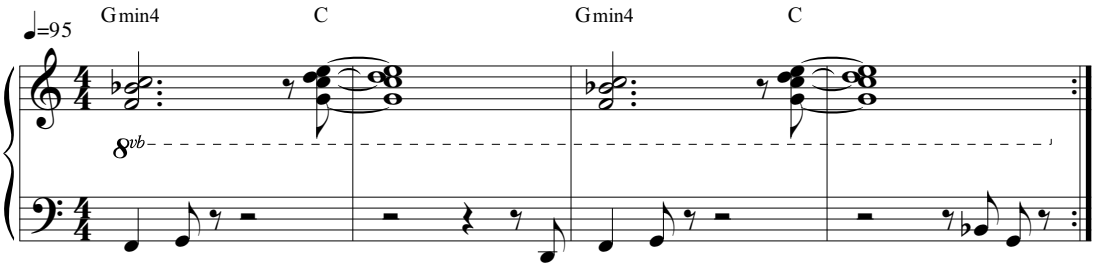
6. Contemporary Jazz Bass

To practice **Ex. 6** effectively, take it at a slightly slower tempo and switch up the drum pattern. All of the chords fall on beat 1 except for the last measure. If you have trouble, slow down the last bar so you can feel the displacement of the chord right after the left hand lands on beat 1.

Dig Deeper

"Skill at left-hand keyboard bass can help you break stylistic barriers at the drop of a hat, as changing up the bass part can shift the entire feel of the song" says keyboardist, composer, and producer **Federico Gonzalez Peña**. Peña has worked with Me'Shell N'DegeOcello, Maxwell, Chaka Kahn, Marcus Miller, and many others. He currently co-leads a band called Gaia, in which his left hand is the bass player.

Ex. 1.



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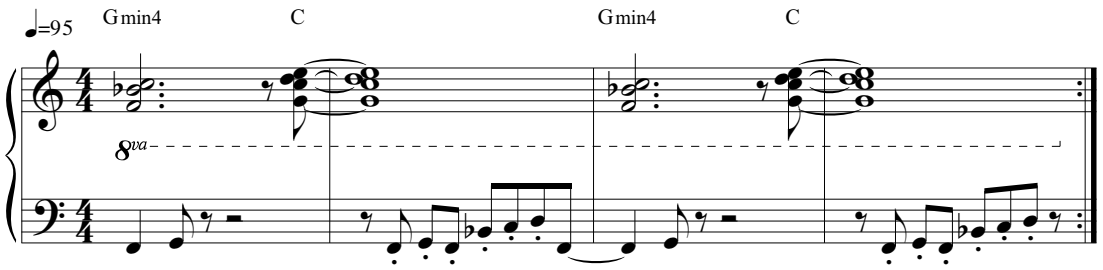
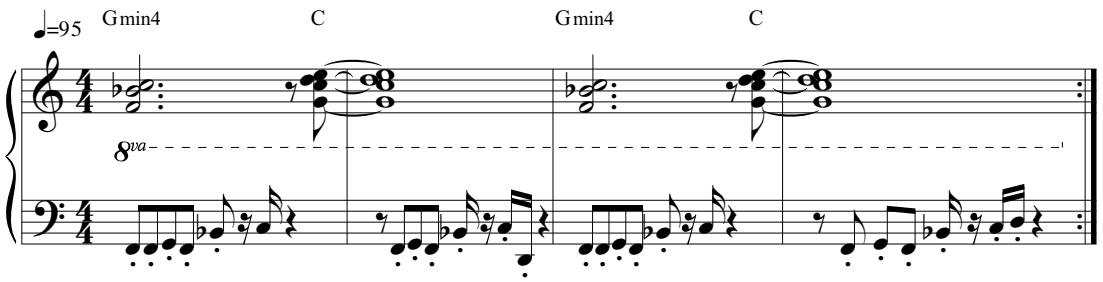
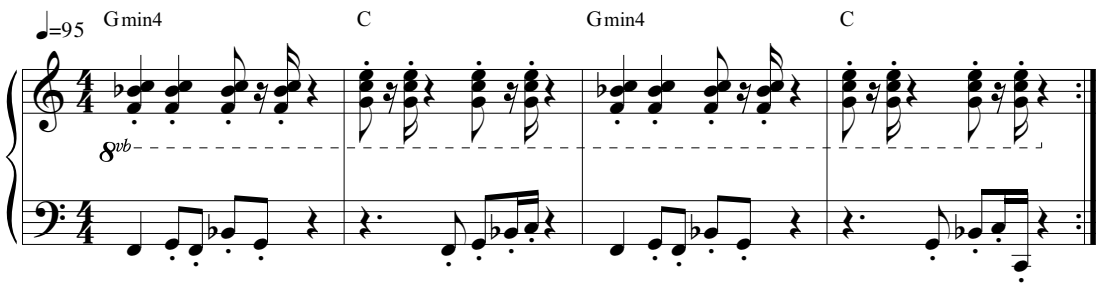
Ex. 2.



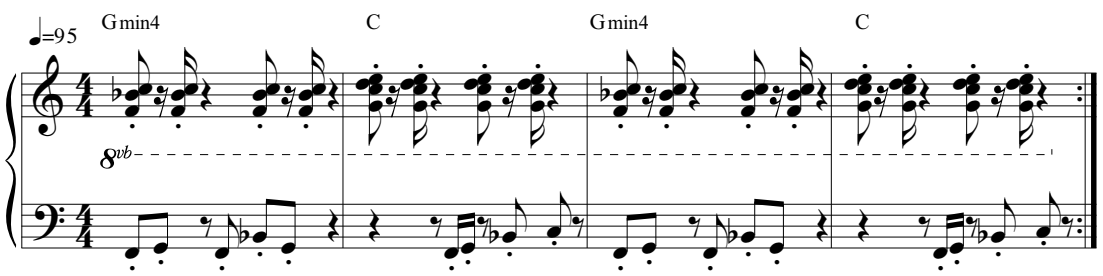
Ex. 3.



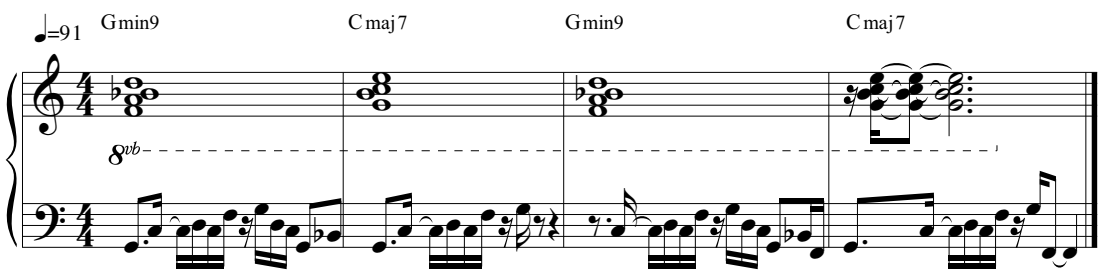
Ex. 4.



Ex. 5.



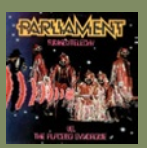
Ex. 6.



Key Listening for Key Bass

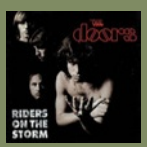
Jazz organists like Joey DeFrancesco and Tony Monaco are well known for left-hand keyboard bass, but what about other styles of music? Here are some of our picks.

PAT METHENY AND LYLE MAYS
"Ozark" and the title track from *As Falls Wichita, So Falls Wichita Falls*.



PARLIAMENT/ FUNKADELIC
Anything Bernie Worrell played, especially "Flash Light" and "One Nation Under a Groove."

ZAPP AND ROGER TROUTMAN
"More Bounce to the Ounce" is as iconic for synth bass as it is for talkbox.



THE DOORS
Ray Manzarek famously anchored the band with his Rhodes Piano Bass, most prominently on tracks like "Riders on the Storm."

Percussive Pedals

ADD IMPACT TO YOUR B-3 BASS LINES

BY BRIAN CHARETTE

A POWERFUL TECHNIQUE USED BY MOST MODERN B-3 ORGANISTS IS TO TAP rhythmically on a bass pedal while playing the actual bass line on the lower manual using the left hand. Only occasionally do they play actual bass notes on the pedals. The *B* pedal is good for tapping due to its unusual, resonant sound. The pedal note and the left-hand note are often different, so you have to hit the pedal lightly with a flat foot to get its signature percussive attack *without* sounding a pitched note that might be dissonant. If you have a clone with a MIDI pedalboard instead of a vintage Hammond, the technique will feel a bit different but will still work. When executed properly, it adds punch, pop, and funk.

Ex. 1.

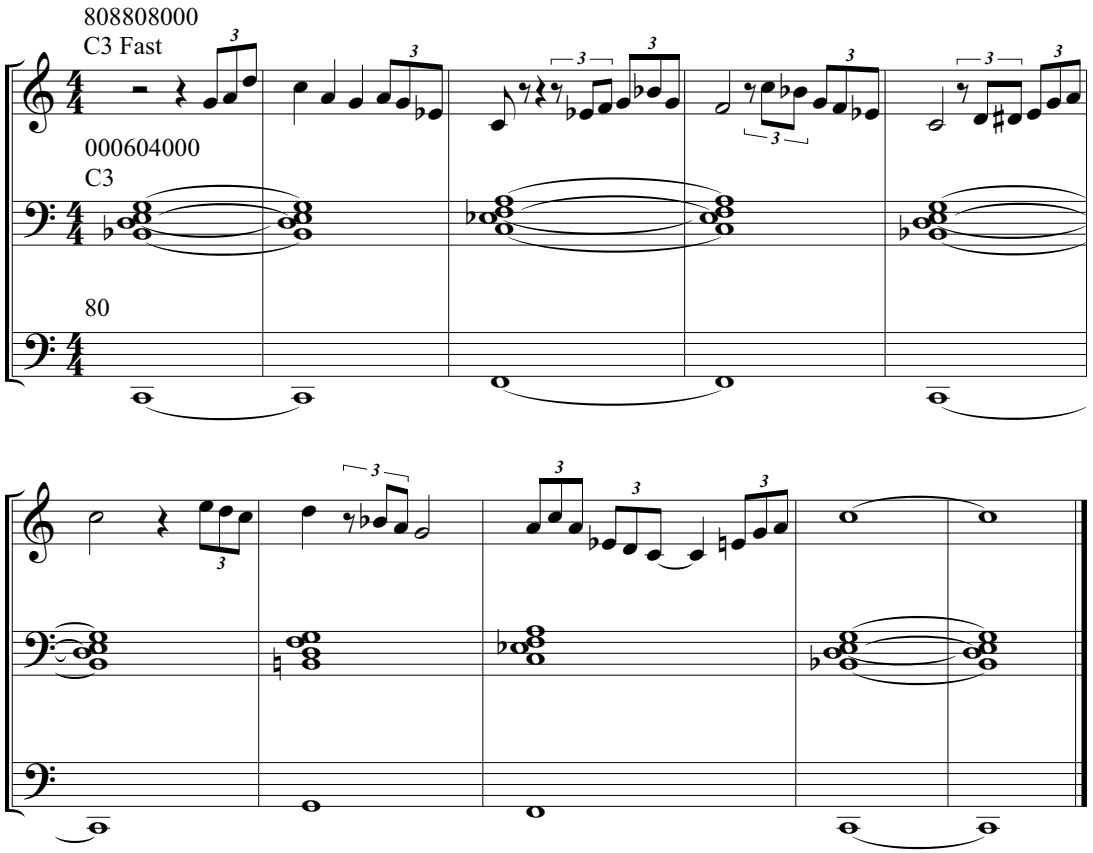
Sheet Music Notes

- The top staff is for the upper manual of the organ, the middle is for the lower manual, and the bottom staff is for the bass pedals.
- Where you see an *X* on the note, tap the pedal without sounding an actual note.
- Drawbar settings above each staff use the standard nine-number notation. Each number means how far each drawbar is pulled out.
- Vibrato and Leslie suggestions (*e.g.*, "C3 Fast") are provided.

1. Brazil via NYC

Ex. 1 uses a "clarinet" setting from the original Hammond Organ owner's manual. Ethel Smith popularized this sound on her most famous recording, "Tico Tico." The right hand spins a twisty melody while the left hand plays bass.

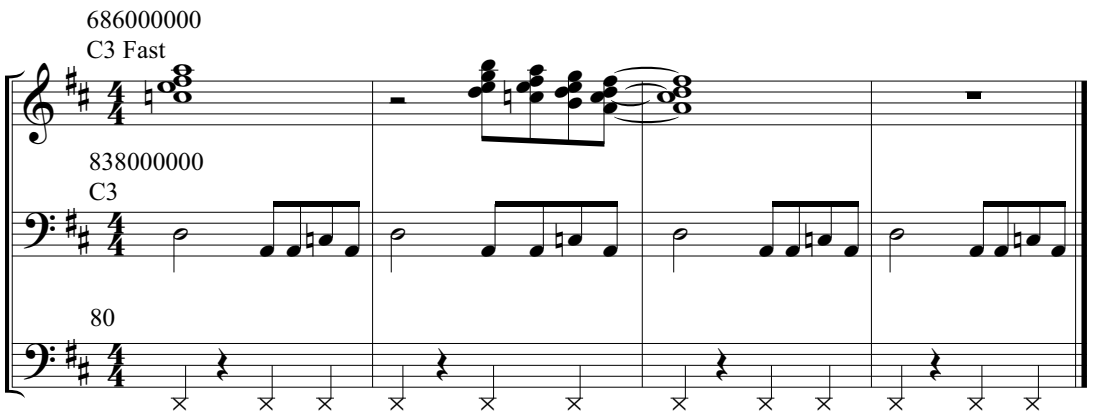
Ex. 2.



2. Triple Threat

In **Ex. 2** we *will* actually play the bass with our feet and hold down chords with the left hand. The right hand uses another Ethel Smith registration, a variation on what's known as the "tibia" setting. (The *full* tibia setting uses the last drawbar as well). If you push in the lowest two drawbars on the lower manual, you can hold chords in your left hand in a range that's transposed up enough that you don't have to cross your hands.

Ex. 3.



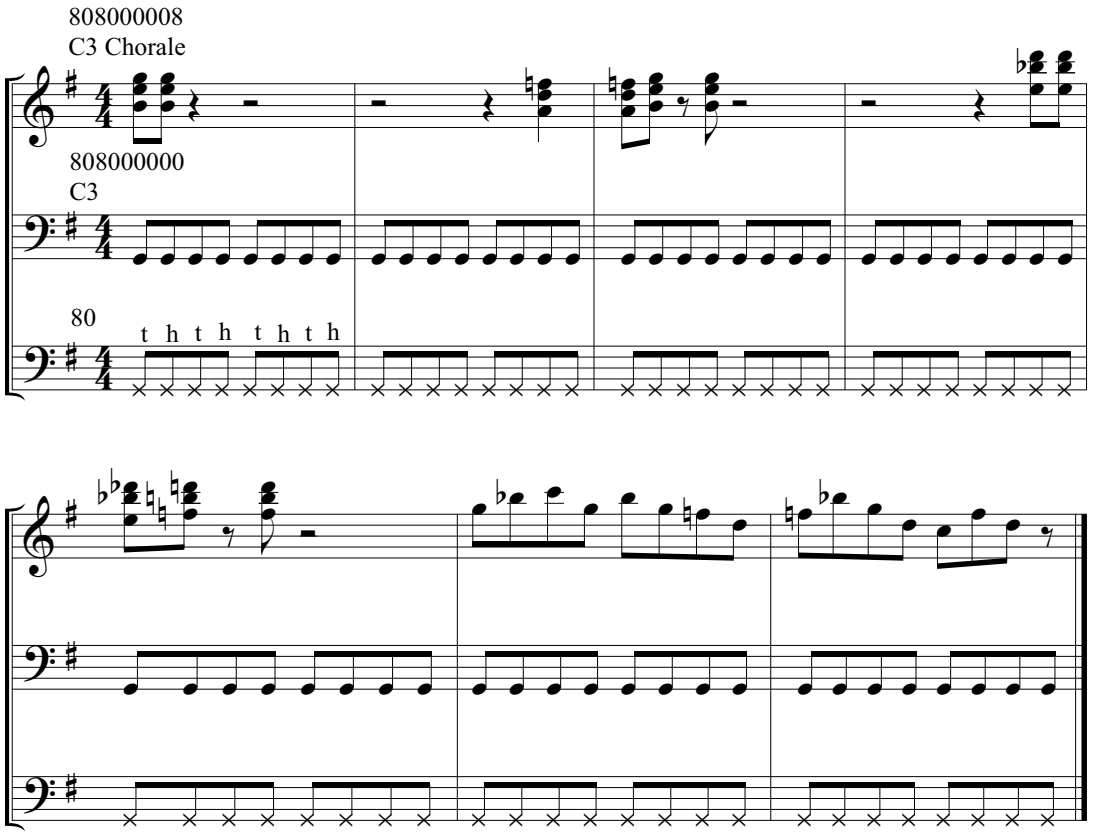
3. Boogaloo

The drawbar stop in **Ex. 3** is straight from classic '70s soul music. This one is almost the opposite of the common *83 8000 000* setting and has a very hollow sound. Here, the foot just taps low *D* notes on the strong beats for emphasis. The bass registration uses a little of the 5–1/3' drawbar in the bass for added punch.

Tap This

"*The* cut for organ pedal-tapping technique is 'Squib Cakes' by Tower of Power. Check out the middle part where it's just drums and Chester Thompson on organ," says **Brian Charette**, who has performed and recorded with Joni Mitchell, Lou Donaldson, Bucky Pizzarelli, Michael Bublé, and Rufus Wainwright, in addition to leading his own jazz groups. Visit Brian at kungfugue.com.

Ex. 4.



4. What Hip Is

Ex. 4 takes a cue from original Tower of Power organist Chester Thompson. The top manual uses what's called the "silk" setting. The left hand alternates between the thumb and second finger for the bass line. The tricky part is that the foot alternates between the toe and heel on the bass pedals. Make sure to keep your hands and feet relaxed and balanced.

Ex. 5.

5. Half Fat

Ex. 5 isn't all drawbars out, nor is it out of Jimmy Smith's playbook—it falls somewhere between. I'm using it over a Gospel/blues "shout" riff—try playing this near the end of someone's sax solo. The feet tap quarter-notes and occasionally play a line. Experiment with where to pedal and look for different tricks as you practice. Here's a favorite of mine: At the end of the night, rest your tired thigh to the left of the bench and tap the *D*♭ pedal with your toe!

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Play-along audio examples.

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The professional USB/MIDI controller (25, 49 or 61 keys)

The Novation Impulse features a precision, semi-weighted keyboard, 8 drum pads and a full control surface. It comes with Novation's award-winning Automap (version 4), the original, most powerful, and now, easiest-to-use control software. This makes getting hands-on with Digital Performer and your plug-ins fast and simple.

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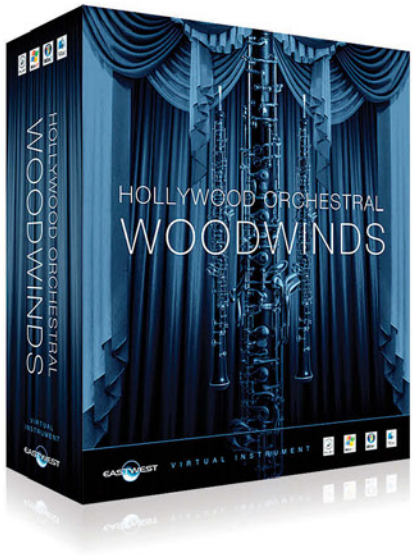
EastWest Hollywood Orchestral Woodwinds
Diamond and Gold Editions

From award-winning sound engineer Shawn Murphy (Star Wars Episode II and III, Jurassic Park, Titanic, and many other blockbusters), Hollywood Orchestral Woodwinds is the most detailed collection of orchestral woodwind instruments ever assembled. Instruments include Alto Flute, Bass Clarinet, Bass Flute, Bassoon, Clarinet, Contra Bass Clarinet, Contra Bassoon, Eb Clarinet, English Horn, Flute, Flute 2, Oboe, and Piccolo Flute. Advanced features include true legato intervals at 2-3 dynamics, true connected legato repetitions, true double tonguing for all instruments and sections, expressive sustains, 9-way staccato and staccatissimo round robins at three dynamics, and much more.



Shure Beta 181 Stereo Set
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Designed for discreet placement and control in live or studio environments, the Sweetwater-exclusive Beta 181 Stereo Set includes interchangeable cardioid, supercardioid, omnidirectional, and bidirectional capsules for superior versatility. The small-diaphragm design provides superior audio with consistent, textbook polar response in a form factor small enough to get close to the source in the tightest conditions. High SPL handling, ultra-smooth frequency response, and interchangeable polar patterns make this the perfect stereo mic pair for any technique in the book. This must-have mic bundle comes with two mic bodies and eight capsules in a custom case.

Genelec 8040A
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With performance comparable to much larger systems, but in a compact package, the bi-amplified Genelec 8040A is ideal for use in MOTU studio situations where wide frequency response is needed but space is limited. Use the 8040A for nearfield monitoring in project/home studios, edit bays, broadcast and TV control rooms, and mobile production vehicles.

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Fig. 1. *Elite Orchestral Percussion* provides several pages of editing options, including keyswitching for various articulations.

THE VIRTUAL ORCHESTRA

Orchestral and Cinematic Percussion

BY ROB SHROCK

OTHER-WORLDLY PERCUSSION IN AN ORCHESTRAL LANDSCAPE SOUNDS thoroughly modern. When excitement is called for, *not* having loads of massive percussion often sounds empty and, well, quaint. I can't imagine the driving intensity of a *Batman* score feeling the same with just an orchestral bass drum and temple block behind the string and brass sections.

Influenced by years of pop music, percussion has become an increasingly dominant force in many modern orchestral scores, especially in film and TV music. Practically every dramatic action cue is underpinned with hyped, percussive ostinatos and booming accents from either live players or samples—or both—that often dominate the rest of the orchestra.

However, there's more to the orchestral percussion section than sub-shaking timpani and taiko drums. Although too numerous to mention all the possibilities, also traditionally found are gongs, snare drums, tam-tams, shakers, tambourines, wind chimes, cymbals, triangles, and more. Glockenspeil, vibes, marimba, and tubular bells add both melodic and harmonic content, usually handled by a dedicated musician who specializes in pitched percussion.

Old versus New

In today's orchestral music, the specific demands of the score drive the size and makeup of the percussion ensemble. There are no rules anymore regarding percussion—or even what qualifies as being *called* percussion. It's not uncommon for big-budget films to use sections of specialty percussionists and esoteric instruments in order to sound unique. A great amount of both commercially available and customized percussive samples and synths show up in everything today from blockbuster movies to TV ads, as the symphonic and pop pallets are fused further into various hybrids.

There's a distinction between "orchestral" and "cinematic" percussion. Orchestral percussion are the more natural-sounding traditional instruments that work equally well for classical repertoire and modern music; while cinematic sounds tend to be larger-than-life and not wholly natural through sound design, and/or derived from world percussion instruments.

Several standout libraries see a lot of action with composers. On the traditional orchestral side, Big Fish Audio *London Orchestral Percussion*, Sonivox *Symphonic Percussion*, and East West Quantum Leap *Symphonic Orchestra* cover most of the bases and sound great in a classical context. Vir2 *Elite Orchestral Percussion* bridges the gap nicely between orchestral and cinematic, and a selection of ethnic instruments are included. The sounds are large and rich, and in some instances may actually be too big for a traditional orchestral setting.

On the cinematic side, ProjectSAM *True Strike* (*I* and *II*) and Quantum Leap *StormDrum* (*I* and *II*) are staples of film, TV, and multimedia. Two great-sounding newcomers are Spitfire's *Percussion* and Vir2's *World Impact: Global Percussion*. Developed with Native Instruments, Heavyocity *Damage* (reviewed Nov. '12) is a great choice for contemporary action films and darker dramatic scenes. At this point, the lines between orchestral, cinematic, and ethnic percussion start to blur as these libraries include some of all; and there are many more libraries out there to choose from.

The Room

Getting percussion to sit correctly in a mix is always a challenge with samples. It's almost always necessary to use one or two unifying reverbs to tie

Fig. 2. The upper left panel of *Spitfire Percussion* allows balancing between close, Decca tree, and ambient mics. Round-robin repeated samples and key-switching are also available.

Fig. 3. *World Impact: Global Percussion* sorts sounds by both type of instruments and world regions.

all your orchestral sounds together cohesively, and a percussive instrument is going to reveal the virtual room for your virtual orchestra quite clearly.

To test this out, I like to call up a few percussion sounds, like a timpani, snare drum, and marimba. These cover a wide range of transients and frequencies that will reveal how your reverb or virtual acoustic space will perform.

Orchestral percussion are usually positioned towards the back of the ensemble and require a bit more reverb; so when you find the size and color of hall and early reflections that work in the way you want, the same ambience tends to work well for strings, brass, and woodwinds.

Size Matters

Keep in mind the "size" of the sampled instruments. Most good libraries are recorded fairly dry and close, as it's always easier to make something sound smaller and farther away than the other way around. The result is that many sounds out of the box tend to be too large for an orchestral ensemble and need to be shaped to some degree.

Depending on the specific sound of the instrument, it may be necessary to roll off some bottom end—and maybe even a touch of top end—to "move" the instrument back in the mix. The proper combination of EQ and ambience is key to getting the percussion to fit properly in a traditional orchestral setting.

As mentioned before, there are no rules on the cinematic side. In fact, "the bigger the better" is usually the maxim; although manipulating the "size" of your percussion is still a critical issue that demands a good handle on signal processing, even with the best libraries.

What to do if you don't own any of the previously mentioned libraries and need to sound cinematic? Roll your own, of course. You'd be surprised at what you can create with much of what you probably already have. Some of the most mundane sounds can become massive when processed with extreme EQ and filtering, effects, pitch-shifting, and layering with other sounds.

Decide on the sonic area of an instrument you want to be prominent and boost those frequencies with a fairly narrow EQ, for example, the low end of a bass drum sound around 90Hz. Pull out a lot of other frequencies to make room for other instruments—you're going for exciting, not natural. If there's another component you want, like a brighter *clack* on top, find a cymbal or wood sound and mangle that with EQ and maybe a slow phaser. Now layer the two sounds; and maybe even add a heavily filtered, pitched synth under them that subliminally follows the root notes of the score. Then add a distinctive reverb sound to it all. Remember again, there are no rules—if it sounds good, it is good.

As inspiring as scrolling through factory presets from a sample library may be, making your own sounds is fun and makes you better at sound design. This *is* an asset for higher levels of composing work, so experiment! ♫

SOUNDCLOUD Audio examples.

keyboardmag.com/march2013

Hardware Synths in Ableton Live

BASICS OF SETTING UP THE EXTERNAL INSTRUMENT DEVICE

BY HUSTON SINGLETARY

GOOD HARDWARE SYNTHS HAVE A presence—in regards to both sound and tactile experience—that software instruments don't fully duplicate. However, getting them to interact seamlessly with your favorite DAW can be challenging. Let's take a look at how to streamline this process in Ableton Live, using a simple but powerful Live Device called the External Instrument.

Fig. 1.

Fig. 2.

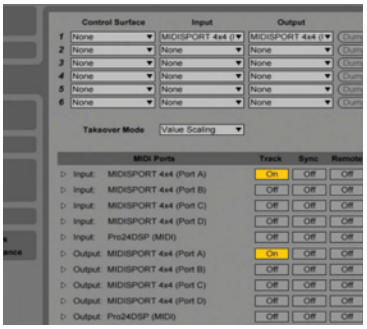


Fig. 3.

You'll find it in the Instruments category of the Live Device browser in Live and Suite versions 8 or later. Double-click on "External Instrument" or drag it onto an empty MIDI track or the Device Drop area. This will create a new track and open the Device View below, containing your new selection. At first glance you may not realize that the new track is now a combination of audio and MIDI. That's the whole idea—not to need to arm a MIDI track and monitor an audio track at the same time. But let's back up a bit and go over the basics.

MIDI Connections

If you have a MIDI interface. Connect a five-pin MIDI cable from your synthesizer's MIDI output to the first MIDI port on your MIDI interface (see **Figure 1**). It sounds obvious, but make sure your MIDI interface is connected to your computer! If you're using a single hardware synth as both your main controller *and* sole sound source outside of Live, also run a MIDI cable from your MIDI interface's port 1 out to the synth's MIDI in. This will let any sequence or controller data you create in Live trigger the external synth.

MIDI via USB. Connect a USB cable directly out of the USB port on the back of your primary hardware source directly into the USB slots on your computer. In **Figure 2**, that's a Moog Slim Phatty, and since it's a rack module, I've connected a Novation Nocturn 25 via USB as my master controller. To control multiple synths, either run more MIDI cables from the outs on your MIDI interface directly to the ins on your synths, or more USB cables into as many ports as are available on your computer. With USB, one cable per device handles MIDI travel in both directions.

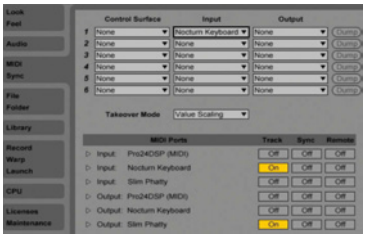


Fig. 4.

Fig. 5.

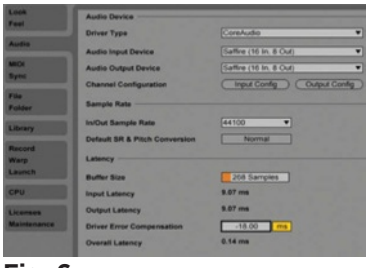


Fig. 6.

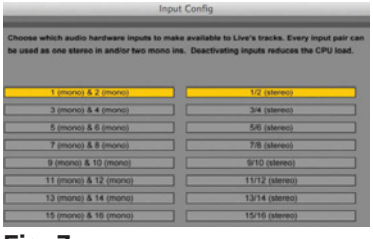


Fig. 7.

MIDI Settings in Live

Open Live's Preferences window and click the MIDI tab in the Preferences pane. If you're using a MIDI interface, its name will show up, as in **Figure 3**. The MIDIsport is visible in the upper input/output area and its individual ports show up below. Turn on the Track buttons for both input and output, and they'll turn yellow.

Using a USB controller instead? In **Figure 4**, my Nocturn 25 shows up in the upper I/O area and in the lower on/off area. The MIDI port of the Moog Slim Phatty—my sound source—is showing up via USB below that. The Track buttons for the Nocturn (as input) and Phatty (as output) are turned on.

Audio Connections

Here's another "obvious" point that gets overlooked surprisingly often: MIDI isn't audio, it's just a set of instructions by which one machine can tell another what to play and how to play it. So you'll need an audio interface to get the sound of your external synth into Live. In **Figure 5** I run the Slim Phatty into an input on a Focusrite Saffire Pro 24. (*Note:* Though we use separate MIDI and audio interfaces in this tutorial, often your audio interface itself will have MIDI ports.)

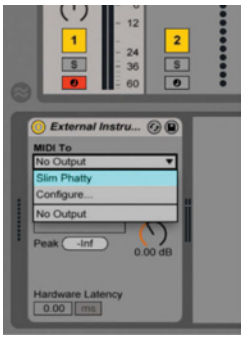


Fig. 8.

Audio Settings in Live

Click on Live's Preferences and select the Audio tab. Here, you can choose both your audio interface (see **Figure 6**) and audio inputs and outputs.

Let's select "1 (mono)" & "2 (mono)" along with "1/2 (stereo)" in the Input Configuration window, as in **Figure 7**.

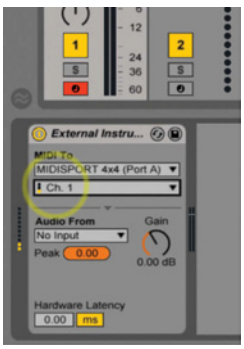


Fig. 9.

External Instrument Device Settings

Now it's time to set up direct routing for audio and MIDI in the External Instrument Device itself. At first you may want to visit the physical track's I/O section—which is intuitive if you've worked with other DAWs—but by directly utilizing your new Device we eliminate the need. Select the Chooser titled "MIDI To" and select your MIDI input routing source. **Figure 8** shows the Slim Phatty, which is connected via USB.

Figure 9 shows channel 1 of the MIDIsport interface where we plugged in the Little Phatty via five-pin MIDI.

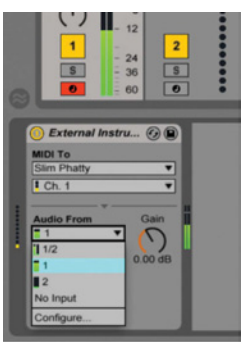


Fig. 10.

Now we choose our audio input routing destination in the External Instrument Device. Click on the "Audio From" Chooser as in **Figure 10**. I'll select "1" because the Slim Phatty is monaural and plugged into just channel 1 on the Saffire.

Next, arm the track's Record button and play your external synth. You should see and hear audio while detecting visual MIDI activity in both the Device and the track itself, as seen in **Figure 11**. That's it—your external hardware can now interact with Live as though it were a software instrument. If you don't hear or see audio activity, make sure you've record-armed the track itself and make sure you select an input audio source in the Device's audio input Chooser.

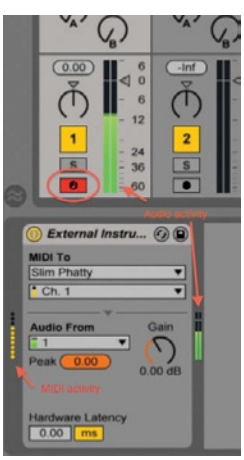
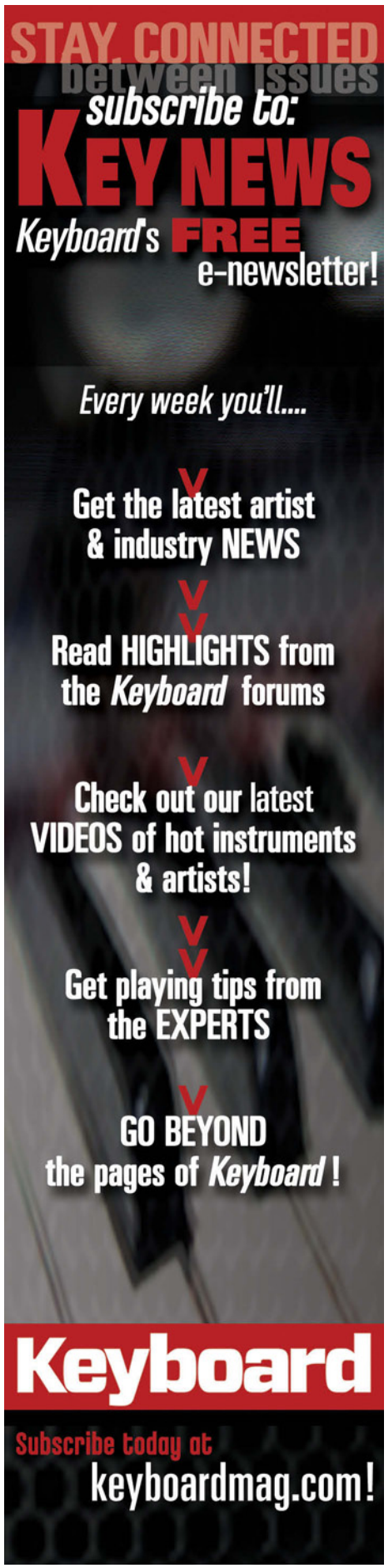


Fig. 11.

You'll also notice a handy input gain knob on the right side of the Device. At the bottom you'll see a Hardware Latency slider. This can compensate for any audible latency when playing or monitoring your external synth (more on this in a future column).

Now that your favorite synth or drum machine is integrated, you can record MIDI, add Live's effects, extract MIDI from audio, take advantage of anything in your synth that syncs to tempo (such as modulation), and much more. To add effects, for example, drag them into the Device View as in **Figure 12**. The possibilities of treating your hardware synth as a plug-in are virtually endless. In future columns, we'll explore specific tricks in detail.

Fig. 12.



THE ART OF SYNTH SOLOING
Oscillator Tuning Tricks

BY JERRY KOVARSKY

A WORLD OF POSSIBILITIES OPENS UP WHEN YOU TUNE TWO OR MORE SYNTH oscillators in various ways, relative to one another. Let's explore.

Detuning

Here's a classic sound—the warm beating of oscillators drifting ever so slightly (or not so slightly) against each other. A common approach is to use the same waveforms and have one oscillator tuned to exact pitch, and then set the other oscillator slightly sharp or flat, usually by only a few cents. A better approach is to spread both oscillators a bit, setting one slightly flat and the other slightly sharp. This doesn't pull your ear in a specifically sharp or flat direction. It's also the better approach when you want wider or more drastic detuning.

Power tip: Some synths (like the AL-1 engine in the Korg OASYS and Kronos, or Native Instruments Absynth) have advanced means to control tuning via offsets, ratios, or other methods. These differ from conventional tuning or fine-tuning parameters in that they can impart a constant beat frequency (the modulation you hear when two notes—like synth oscillators or guitar strings—are almost but not quite identical in pitch) across the whole keyboard, rather than the usual "smeared tuning" sound you get from detuning.

If you don't want to "spend" two oscillators to achieve this sound (or your synth only has one oscillator) look to the waveform choices offered and see if there's a variant that is already detuned. Roland was the first to offer that in their JP-8000 hardware virtual analog synth, with its "super saw" that used DSP to stack up seven detuned sawtooth waves while only using one voice of one oscillator. Many other synths now offer this type of wave, calling it "HyperSaw" or some other telltale variant. Another approach is using the Unison parameter in your synth—many have this and it lets you set both the number of voices used and their detuning amount. Just note that if you want to use another oscillator for a different waveform or effect (like sync, perhaps), Unison will also affect that.

If you want to recreate the slight drift that older analog synths had, you should use a different approach. I'm not talking about overall pitch drift (which may be available as its own parameter in your synth and called something like "analog drift" or "humanize"). I'm talking about the variation of the interval between the two oscillators. This is subtler, as it's the sound of oscillators *trying* to stay in tune but drifting in and out slightly. Using tuning offsets like the above means that the given oscillator is always slightly sharp (or flat), and that's not the same. What to do? Use an LFO, set to either a triangle or sine wave, to modulate the pitch of one of the oscillators. The rate should be slow and the depth set to taste. This produces a variation in pitch that includes returning to perfect unison in between sweeping slightly sharp and slightly flat.

One trick I like here is to set the modulation depth to a known interval (whole step, fifth, octave) for reference while I choose the rate

amount, as it's easier for the ear to detect the rate of a sweeping interval than very subtle pitch variations. Once I get a rate I like, I then reduce the depth a suitable amount. If you'd rather not have such a repeating, periodic change in pitch, see if your synth offers a random waveform for the LFO. U-he's free soft synth Podolski (shown) is one example. Some synths offer random shapes, some producing more stepped changes, others yielding smoother but still changing values.

Intervals

Tuning oscillators in pure intervals is another classic sound, and there are plenty of permutations to explore. The most common choice is setting a second oscillator an octave above or below the first. Both synth leads and synth basses do this all the time. Be sure to try mixing the oscillator volumes in various ways—they don't always have to be the same level. Some synths have a sub-oscillator fixed at an octave (or two) down. Great—that frees up your second oscillator for some detuned doubling, or to produce yet another octave, so you could get 16', 8', and 4' "footages" in the same patch.

Tuning a second oscillator a fourth (+5 semitones) or fifth (+7 semitones) above the first produces a Chick Corea-style fusion lead sound. If you reduce the level of the detuned oscillator it becomes less dominant, acting more like a harmonic of your main sound and less like an obvious interval. I especially like to raise the tuned oscillator an additional octave (+19 or +21 semitones, *i.e.*, one octave plus a fourth or fifth) and just blend it in a bit. Also be sure to try different waveforms for the tuned interval. Triangle, sine, or wide pulse waves can help soften the harmonic.

"Outside" Tunings

I've been hearing oscillators tuned in minor thirds (+3 semitones) and major thirds (+4 semitones) in electronic dance music. This is less "inside" sounding and works better for melodic parts that aren't necessarily about the old-school "let 'er rip" type of soloing. Don't be afraid to explore these! Likewise, tuning three oscillators to produce a minor or major triad can sound like a sampled chord hit, and may be just the effect your track needs. ♫

Three Oscillator Fun

If your synth has three (or more) oscillators—as any real or virtual Minimoog does—you can take your tuning experiments even further, producing stacked fourths or fifths. Try these setups. Oscillator 1 is your base or unison pitch.

DESIRED SOUND	OSCILLATOR 2	OSCILLATOR 3
Stacked fourths	-5 semitones	+5 semitones
Stacked fifths	-7 semitones	+7 semitones
Fifth above and below	-5 semitones	+7 semitones
Fourth above and below	-7 semitones	+5 semitones
Minor triad	+3 semitones	+7 semitones
Major triad	+4 semitones	+7 semitones

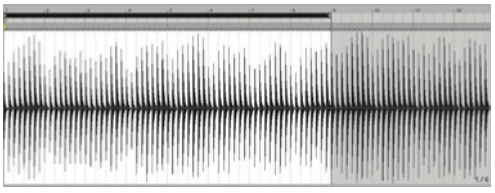
Tracking Synths Sans Memory or MIDI

BY FRANCIS PRÈVE

NOW THAT REAL ANALOG SYNTHS ARE BACK WITH A VENGEANCE, PRODUCERS have to contend with—*gasp*—no programmability. Many of the best analog beasties shipping today feature tons of knobs but no memory for presets. The same goes for vintage monosynths like the Minimoog, Sequential Circuits Pro-One, and many others. What's more, unlike their modern counterparts, most of these don't have MIDI, so when you hit upon an inspiring synth riff, driving it from a MIDI track in your DAW as you twiddle the knobs isn't an option.

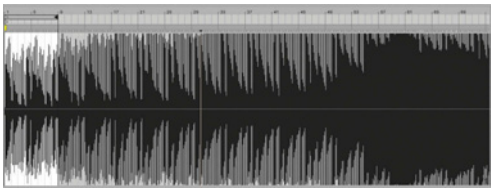
Hence, our goal: To morph and record the sound of a synth riff in a way that suits the overall track, without changing presets, and without driving parameter changes via MIDI or DAW automation. A little advance planning and a better understanding of how dance music is arranged will go a long way toward getting great results from your analog synth. Having your twists and turns captured on a simple audio track (as illustrated by the waveform screenshots below) also allows for clever audio editing tricks down the line.

Step 1



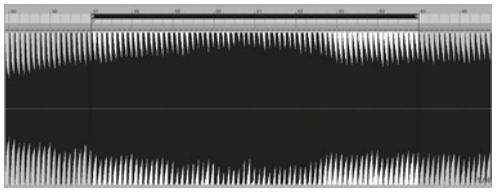
Once you've got the right synth riff happening, contemplate how the sound itself should evolve, and determine the "smallest" and "biggest" sonic extremes for the part. For example, the "small" sound might be a plucked sound with a short decay, low cutoff frequency, and a bit of percussive envelope on the filter. Now, note the settings for that part.

Step 2



From there, figure out how you want the sound to evolve into something different. One technique is to transform it into a bigger, nastier sound with open filters, longer releases, and a bit of distortion. So tinker with your synth parameters in a way that allows you to retrace your steps back to the smaller part.

Step 3



You want to build gradually from your "small" to your "big" extremes. Dance music generally works in eight-measure chunks. So as you record, start with eight measures of your initial sound, then use the next eight measures to slowly build it to another plateau, then let that run for eight measures, then build it a bit more, and so on, until you reach your peak "big" settings. This way, you'll have neat little sections of several types of sounds that can be sliced, diced, looped, and reordered in a way that makes real musical sense.

Step 4

If you're playing the riff manually as you would on a MIDI-less analog synth (well, unless you had an analog sequencer or MIDI-to-CV setup, but that's a whole other column) you can take breaks between each eight-measure record pass to move your synth's knobs by a little bit each time. If you *are* able to let the the synth riff loop via MIDI, then by all means do so, let an audio track run in record mode, and "play" the knobs with the eight-measure phrase in mind. That's a more right-brained process that also allows for happy accidents.

No Presets? No Problem!

Here are four desktop analog synths we fell in love with even though they don't store presets. Get quicklinks to our full reviews at keyboardmag.com/march2013.

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MiniBrute

DOEPFER
Dark Energy

MOOG MUSIC
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PART 2

LAST MONTH, WE BEGAN ROUNDING UP PORTABLE POWERED STAGE MONITORS THAT ARE GREAT FOR HEARING YOUR keyboard rig onstage—or in some cases, filling the room with your keys without depending on the wild card that often is the house P.A. in live music venues. This month, we bring you more, covering Mackie's highly anticipated DLM speakers, small but mighty eight-inchers from industry veterans Electro-Voice, and a crazy-powerful outlier from Bassmaxx, a name more familiar to the DJ crowd . . . until now. We'd hoped to bring you a combo amp or two as well, but we'll be giving them standalone reviews as the products become available, so don't miss an issue!

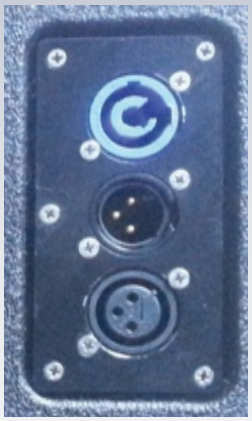
BASSMAX YESMON CCM112

You won't find the YesMon CCM112 among the usual powered speaker suspects at garden variety retailers, and the company's website is replete with pictures of touring systems for DJs and installs in nightclubs. Keyboardists are known for looking outside the box, though, and that certainly describes the CCM112. This little wedge (it's also pole-mountable) drives 1,500 watts of Class-D power into a 12" woofer with a coaxially mounted tweeter. The picture doesn't do justice to how tiny it is—just 14" x 15" x 12".

Unlike most "music store" powered speakers, there's no onboard mixing, mic input, or even any knobs. The single XLR input is line-level, so you'll need a compact mixer for routing and gain control. What looks like a Speakon audio jack is actually a locking Neutrik PowerCon connector, and the needed cord is included. Don't worry—you can't accidentally plug it into a Speakon audio socket.

Here's the big deal. This thing is *loud*—for its size, the loudest speaker I think I've ever heard. You could be in a 2,000-seat theater with everything except your keyboards going through the house line array, and the back row of the balcony would be able to hear them just fine. Running a Korg Krome and then a Yamaha Motif ES straight into the CCM112 (to keep the gain chain simple), I couldn't turn either keyboard's volume up past a third without literally becoming frightened of how loud it got. Not that the speaker itself showed any hint of getting crispy—it remained clear as a bell.

The CCM112 does seem intended for use with a subwoofer. The enclosure is sealed, not ported, and for that reason the bottom two octaves of piano sounds—while still plenty loud—sounded a bit metallic and boxy compared to the Line 6 speakers I tested last month. Bassmaxx also sent us their SSP115 sub, which adds a number of DSP-based crossover/EQ presets and turned my rig into something approaching a one-keyboardist Ultra Music Festival. The sub is compact (about 22" on a side) but a non-trivial carrying commitment at 89 pounds.



The YesMon CCM112 puts its connectors on the side, letting you make any other surface the bottom when placing it as a floor wedge. Pole-mount it atop the SSP115 subwoofer, and the side becomes the bottom with the connections logically facing downward. Connections themselves are simply XLR line in and thru, and that blue jack only looks like a Speakon—it's for AC power.

By weekend warrior standards, Bassmaxx gear is expensive, though lower-powered versions of both the monitor and sub are somewhat more affordable ($1,650 and $1,999, respectively), and honestly, more than loud enough for any monitoring or filling-the-house keyboard application. If having the most swagger of any keyboard player you know is worth the price, going Bassmaxx would be how you get it. Stephen Fortner

The ZXA1 can pole-mount atop the optional ZXA1 Sub, but the top cabinet is surprisingly bassy, clear, and loud on its own.

ELECTRO-VOICE ZXA1

I've been using a stereo pair of Electro-Voice ZXA1 speakers as keyboard monitors for over a month. Each weighs in at just 19 pounds, and with a footprint of about 18" x 11" x 10", they fit nicely on the floor beneath my Yamaha S90XS.

I'm a freelance keyboardist who does around 100 gigs a year, primarily in a five-piece, high-energy cover band. We perform lots of country hits, dancey stuff from Lady Gaga and Pink, some '80s hair band music, and classic rock. Venues range from smaller corporate parties, to medium to large clubs, to outdoor summer festivals, to the occasional concert hall. The EVs are easily heard and I have lots of headroom—I could run the ZXA1s much louder than I currently do.

I'm very impressed with clarity and smoothness with which they reproduce piano patches. On complex multitimbral setups, the speakers are very articulate and I can easily hear the various individual sounds being used. The speaker also does a good job reproducing my clonewheel organ when it's impractical to bring a Leslie.

The eight-inch woofer might seem small, but the bass response in the ZXA1 is optimal for my needs—keep in mind that a stereo pair moves twice the air. A big reason I prefer the EVs over most other powered speakers I've tried is that the pianos sound more natural in the bass register in particular. In fact, since switching to the ZXA1s, I now run all my mixer EQ settings flat.

I almost always have the benefit of a good front-of-house P.A. and so I have used the ZXA1s mainly for monitoring. Judging them based on current performances, though, I think you could easily fill medium-sized clubs with a pair of these and no subwoofer. It would certainly work well for jazz, blues, or any sort of piano-based gigs. I currently perform pieces where the band's bassist plays acoustic guitar and I play the bass guitar parts on the S90XS. The sound coming out of the ZXA1 pair *thumps* onstage. Genres utilizing heavy synth bass or, say, sequenced kick drum parts, would call for adding a single ZXA1 Sub (the subwoofer that's marketed in conjunction with the ZXA1 tops).

Though the lightweight ABS cabinet makes me wonder how this speaker will hold up to prolonged road abuse, so far I've had no problems. A slot on the top rear of the cabinet where you insert your fingers serves as the only handle, but the light physical weight makes this almost a non-issue.

All in all, I'm extremely pleased with the ZXA1 speakers, and they're very well priced—and by that I mean low—for the audio quality they provide. Clarence Boyd

The ZXA1's rear panel has two inputs: an XLR mic in with independent gain control, and a XLR/TRS combo jack that's line-level only. The XLR master out sums the mic and line inputs. Toggling the 100Hz low cut (for use with a subwoofer) requires a stylus such as a paper clip, preventing accidental changing at the gig. There's built-in overload protection, but no EQ.

POWERED SPEAKERS AT A GLANCE

	Bassmaxx YesMon CCM112	Electro-Voice ZXA1	Mackie DLM8	Mackie DLM12
Price (list | street)	$2,750 | $1,899	$595 | $499	$879.99 | $699	$1,059.99 | $849
Woofer (LF)	12"	8"	8"	12"
Tweeter (HF)	1.5" compression driver	1.25" compression driver	1.75" coaxial compression driver	1.75" coaxial compression driver
Amp power to drivers	750W to LF 750W to HF 1,500W total	400W to LF 400W to HF 800W total	1,000W to LF 1,000W to HF 2,000W total	1,000W to LF 1,000W to HF 2,000W total
Weight	30.6 lbs	19 lbs.	22 lbs.	31 lbs.
PROS	Very loud—the best output-to-size ratio we've ever heard	Surprising output and bass response for an 8" system, especially with stereo pair. Sounds natural on piano.	Clean. Loud. Plenty of reserve power. Rugged construction. Kickstand for angling. Very light and portable.	
CONS	Expensive. No ground lift.	No ground lift.	No ground lift.	
Website	bassmaxx.com	electrovoice.com	mackie.com	

MACKIE DLM8 AND DLM12

Mackie's DLM series looks like a conventional "box" P.A. but offers several interesting twists. The DLM8 and DLM12 have 8" and 12" woofers, respectively, and each uses a Class-D amp that pushes 2,000 watts of peak power. The drivers are mounted coaxially (a design originally made popular by Tannoy studio monitors) and vertically aligned so that the sound from the tweeter and woofer come at you from the same point—what Mackie calls "TruSource."

The sound is clean, with plenty of reserve power for transients—attacks do indeed *attack*. There also seems to be less "falloff" at a distance (possibly TruSource at work), and enough level to hit you hard if that's what you want. The overall response is smooth, with no midrange boxiness, and the highs have presence without being screechy. Do a bass slide, and you won't hear any response holes in the low end.

Even the little DLM8 is plenty loud and balanced. It's also extremely compact (about 11" x 12" x 11.5") and light. For more low end and punch, the DLM12 is a logical upgrade, but I don't see you needing the companion DLM12S subwoofer for keyboard monitoring, unless you need to fill a large club with no help from the main P.A. The rugged enclosures are made of ABS plastic, have a kickstand for angling as a floor monitor, and with 20-gauge speaker grilles, if something falls on the speaker while it's angled back, the speaker will most likely survive better than what falls on it.

Each of the DLM digital mixer's two inputs has a level control, three-band EQ, and send for one of the 16 onboard effects, which cover reverb, chorus, and delay. The effects may be icing, but they sound good—you might prefer the reverb to those in your keyboards. Globally, there are six speaker voicing options, a multiband feedback reducer (which helps with vocals), overload protection, three storable presets, and a switchable 300ms delay for balcony placement.

While there's an XLR thru jack, it carries either the signal from input 1, or a mix of the two inputs, so you can't send a true stereo signal to the front-of-house—unless, of course, you use two of them or put a compact mixer upstream.

The DLM series is all about portable power in a convenient form factor, with clarity that adds a bit more of a hi-fi studio monitor vibe. For my money, that's what makes it ideal as a keyboard amp. Craig Anderton ♫

Both Mackie DLM models include the same electronics. Of the two inputs, one is a combo jack with a mic/line switch (no phantom power), the other a combo jack for instrument or line—with both set to line, you can plug in a stereo keyboard.

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ROLAND Integra-7

BY ROB SHROCK

RACKMOUNT SOUND MODULES HAVE BEEN A SLEEPY CATEGORY FOR THE PAST several years—either your synth has a keyboard, or it's an analog desktop wedge, or it's software. The Integra-7 aims to reverse that trend and offer a premium composer's tool in the bargain. It boasts the latest SuperNatural sounds plus a near-complete history of Roland patches in one box. It also adds surround, enough hardware outputs to support this, and lots of tweaking and navigation via an elegant iPad app. Is this enough to send you digging for that plastic bag of rack screws? Read on. . . .

Overview

Practically all of Roland's current and legacy sounds are in the Integra-7. In addition to its internal sounds, built-in are all six current SuperNatural expansion titles (ExSN), all 12 SRX expansions (remember the XV-5080?) and a high-quality General MIDI 2 sound set. Impressive.

USB lets MIDI and audio pass between your computer and the Integra-7. Front and back-panel aux line inputs allows a source to either pass through to the unit's audio outs, like backing tracks from an iPod, or be processed internally through effects and panning. Though you can edit all the parameters from the front panel, the free iPad-based editor (more on this later) really is a must-have.

Sounds

"SuperNatural" is Roland's term for their proprietary behavior modeling, which combines multi-sampling, physical modeling, and programming into detailed acoustic, synthetic, and drum instruments—including a three-layer virtual analog synth reminiscent of Roland's Gaia and drawbar organs derived from their VK family. Beyond including every sound from the Jupiter-80, the Integra-7 introduces 50 new SuperNatural sounds.

SuperNatural sounds come in three categories: acoustic, synth, and drums. Standouts on the acoustic side are the grand pianos, mallets, strings, woodwinds, and brass. The acoustic pianos are almost worth the price of the entire box, as they're immensely responsive and playable and would hold up on recording dates better than most workstation pianos I've heard. There are realistic Rhodes and Wurlies, but I'd like to see more of them. Tonewheel organs are the VK type, with drawbar-based voicing, but there's no easy way to play the drawbars, as even the Integra's iPad editor currently lacks the drawbar screen you'll find on the Jupiter-80.

The brass and woodwinds intelligently switch articulations (including mono versus poly), letting you play trills and realistic legato lines as well as chords. Between controlled dynamics, fingering, the modulation wheel, and an expression pedal, it's very easy to play extremely musical lines. The solo strings are quite good, and if you need to cover guitar parts from a keyboard, many of the acoustic and electric guitar sounds are exceptional.

On the SuperNatural synth side, there are a ton of patches that cover pads, strings, brass, FM, and much more, and they almost all sound great, especially with a little controller tweaking. Here, the iPad editor helps tremendously, but a full editor/librarian for a desktop or laptop computer would be welcome. Roland says it's in the works.

The "legacy" aspect is the inclusion of all the waveforms and patches of the stock XV-5080.

Snap Judgment

PROS All the Jupiter-80 sounds, 50 new SuperNatural sounds, plus a deep vault of Roland legacy patches. Multiple outputs and surround panning of multitimbral parts. Part effects stay the same when in a Studio Set (multitimbral setup). Can act as a USB audio interface. Pristine sound quality. Great iPad app makes navigation and some editing tasks easy.

CONS Polyphony of 128 voices seems low for this kind of module. Limit of 64 Studio Sets. Not all SRX sounds available at once. Limited SuperNatural editing. Can't load samples.

Also built in are all 12 of the SRX expansions, originally sold as cards for the XV. Not all of these sounds are available at once, which is an odd limitation by today's standards since they're already built in. Although a number of SuperNatural, PCM, and GM sounds are burned into internal memory, many sounds reside in "virtual" expansion slots—which are technically internal, but separate from the *internal* internal memory where the new sounds reside. This is likely necessitated by new and old sounds having such different architectures.

You load an expansion into one of four slots, which takes only a few seconds. If you save a setup that uses an expansion patch, it won't play unless the parent title is loaded, so even if you only want one sound from an expansion, you need to load the whole pack. You can mix and match ExSN and SRX expansions within the four slots, but if the GM2 set is loaded, it uses all four slots at once. Otherwise, expansion sounds can be mixed freely with internal sounds to form Studio Sets.

The Integra-7 uses different names than Roland modules of the past. A Studio Set (formerly Performance) contains up to 16 parts, each consisting of a Tone (formerly Patch). On the legacy PCM and SuperNatural synth side, a Tone is made up of Partials while an "Inst" is the unit of sound in a SuperNatural acoustic Tone that contains all the behavior modeling parameters.

Similar to how the Jupiter-80 works and unlike older Roland synths, the Integra-7 is always in multitimbral mode, so Studio Sets are what you call up from the front panel. Oddly, there's no quick way to scroll through Studio Sets as you could with Performances on older modules; you must hit Menu, make sure "Studio Set Select" is highlighted, hit Enter, scroll to the desired Studio Set, and hit Enter again. This process is much easier on the iPad app, which lets you touch-select Studio Sets and individual Tones within them instantly (see **Figure 1**). MIDI program messages can also select Studio Sets.

Currently, you get only 64 Studio Sets in memory. On a live gig, I could see going through three or four Studio Sets in a single song for complex splits and layers, so I'd like to see this at least doubled.

Each of the 16 parts in a Studio Set now has its own multi-effects (MFX) and EQ upstream of the Studio Set's chorus and reverb, which is great. Even better, a Tone's preset MFX stays with it when you put it in a Studio Set—no more importing a Patch into a Performance and wondering why it doesn't sound the same!

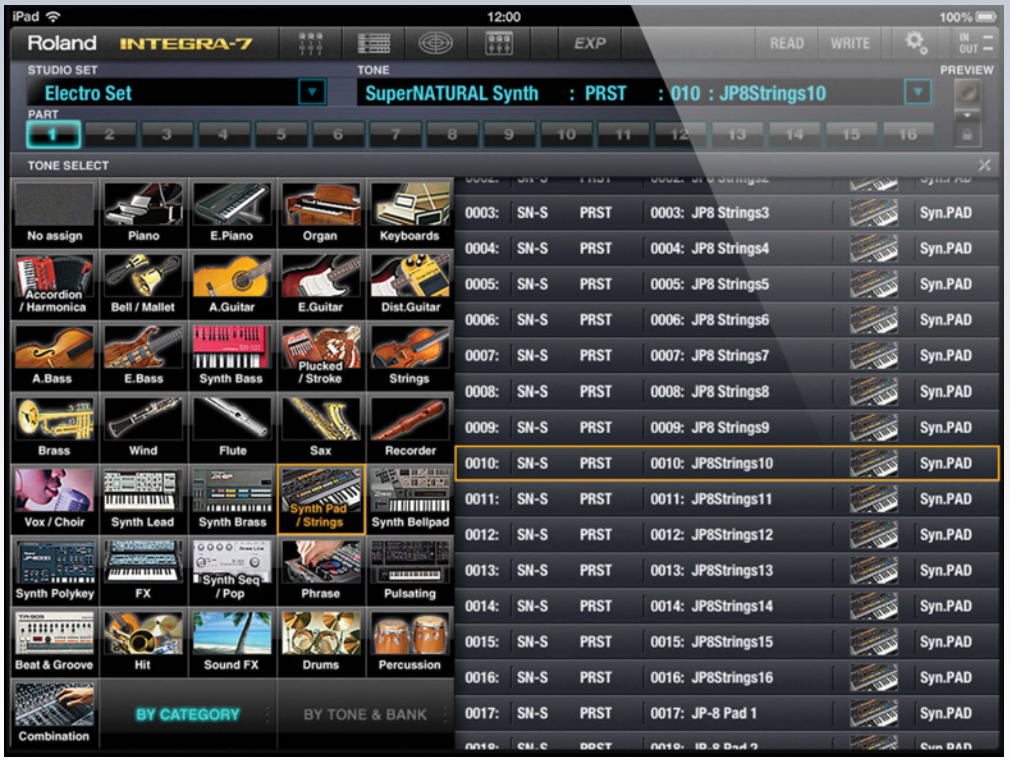


Fig. 1. In the Integra-7 Editor app for iPad, you can quickly touch-select Studio Sets and individual patches (Tones).

Fig. 2. Here's the SuperNatural synth editing screen. Think of a Roland Gaia, or maybe three polyphonic SH-101 type synths stacked up.

Fig. 3. Motional Surround lets you position every multitimbral part in a Studio Set in 5.1 space—and pan the parts around using MIDI CC messages.

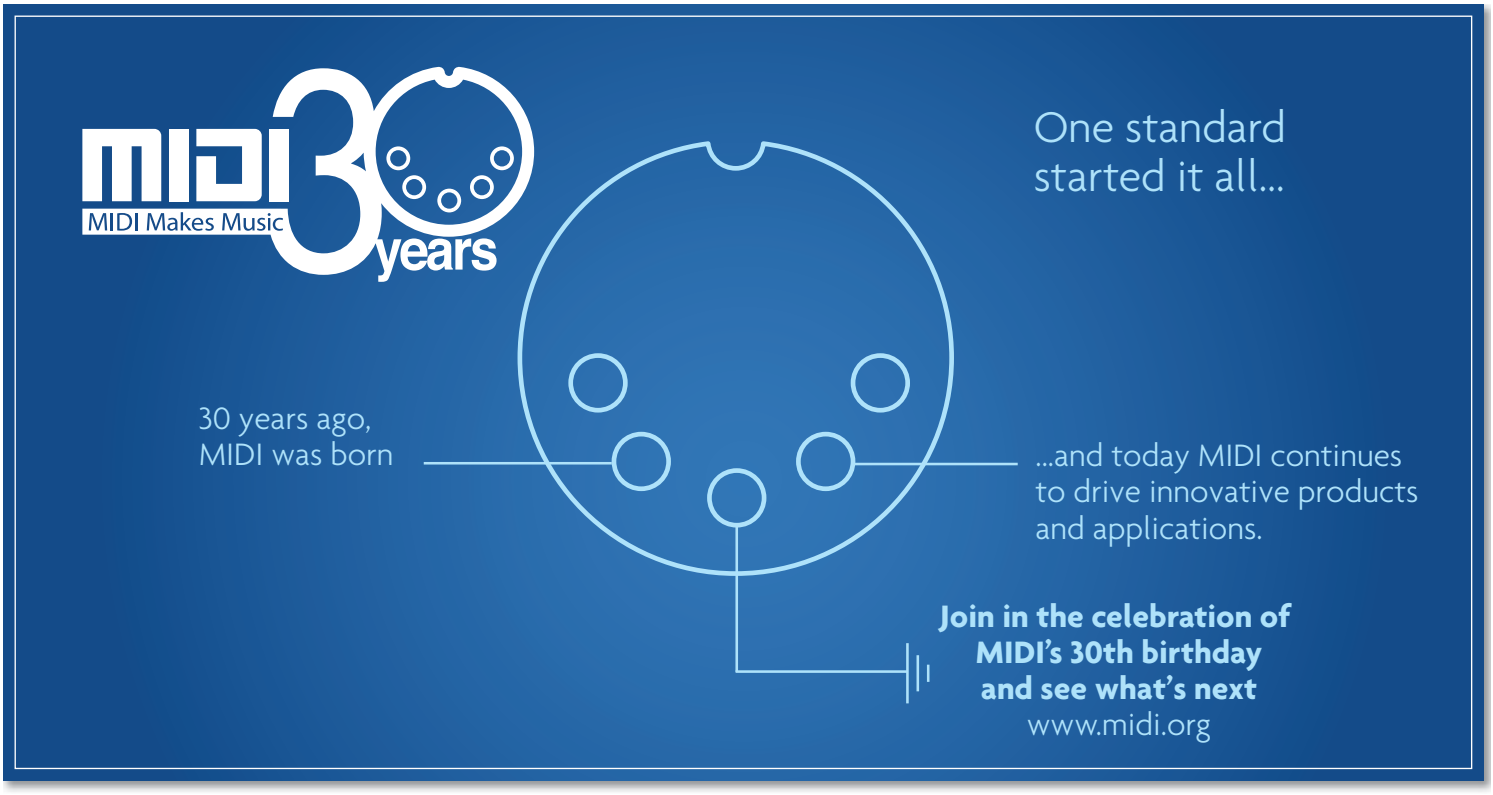
In essence, a V-Drums module is built in. Although drum kits can be loaded into more than one part of a Studio Set, a single designated Drum Part now gets six compressors and EQs for more detailed routing and processing. Finally, the master EQ is great for tweaking the overall output.

I'm a longtime XV-5080 user, having employed it for many years in Burt Bacharach's band, as well as in my rock band, AM/FM. Before you kick your XV-5080 to the curb, though, there are a few changes to consider. The Integra-7's polyphony is 128 voices. (The XV-5080 had 256 voices, as does the Jupiter-80.) Considering that the Integra-7 is primarily designed for studio use, this could be an issue in a dense layer or sequenced orchestration, as some of the SuperNatural sounds eat up polyphony.

Most sorely missing on the Integra-7 is the ability to add sample RAM and import Roland or Akai samples, which I could do on the XV-5080. Roland has a tendency towards the polished and the pristine in their sounds, so I've always found this great for getting more grit and attitude out of one machine.

Editing

Getting around on the front panel is easy enough, but nothing beats a great software editor. Enter the free Integra-7 Editor app for iPad. You'll need



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an Apple Camera Kit adapter for USB connection to the Integra-7. You can also use WiFi via Roland's optional WNA1100-RL wireless adapter.

Although it doesn't currently edit every function, this is one of the best software editors I've seen, thanks in part to Roland's extensive implementation of the iPad's multi-touch screen. Separate windows for the mixer, Studio Set, surround positioning of MIDI parts, and Tone editing give you intuitive screens that are a joy to tweak. SRX expansions are loaded via drag-and-drop. Editing a SuperNatural synth Tone works just like on the touchscreen of a Jupiter-80 (see **Figure 2**).

Motional Surround

Roland's Motional Surround is a new feature of the Integra-7 that operates in two modes: 5.1 or stereo. When off, the unit operates as normal with four assignable stereo output pairs: Mix/A, B, C, and D. When surround is turned on, the B, C, and D output pairs become dedicated 5.1 outs. When connected to a surround speaker system, you can pan each Tone (*i.e.*, single sound on its own MIDI channel) via either the front panel or a circular soundstage screen in the editor app, and that aspect works great (see **Figure 3**). Motional Surround automatically disengages the Studio Set's reverb and chorus. The aforementioned external input can be controlled as a 17th part, and MIDI CC messages can automate the trajectory of any Tone through 5.1 space.

If you're monitoring in stereo, the main Mix (and headphone) outs can produce simulated surround. You can hear the illusion of different instruments being in different spatial locations, but in practice, I never got the effect to sit right with other sounds in a sequenced environment. Motional Surround is better if you have the monitoring system to support it, in which case it can be quite powerfully applied.

Conclusions

Roland has a tentative hit with the Integra-7. On one hand, there's so much: all the past JV and XV sounds; a complete Jupiter-80; great drum sounds from the V-Drums; killer SuperNatural acoustic pianos; surround; clean, versatile outputs; powerful effects; and iPad control. Then, there's stability: Hardware modules won't stop working as of some future OS on our computers.

The newer SuperNatural sounds really let you play like a keyboardist but sound like the acoustic instrument that's called up; however, it's not always easy to emulate as precise a behavior of that instrument as a seasoned composer may be shooting for. I hope to see continued refinement in this area. My other main concern is that the polyphony of 128 voices, while plenty for a stage keyboard, seems a bit tight for composers who want to maximize the Integra's formidable multitimbral capabilities in the studio.

The Integra-7 is a powerful hardware module, especially for someone who wants a Jupiter-80 plus the Roland library of the past in two rack spaces. Now that I'm done writing, I'm going back to playing that acoustic piano sound. . . . ♫

Bottom Line

Everything Roland—current and legacy—in two rack spaces.

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Editor Stephen Fortner goes hands-on with the Integra-7 at Roland HQ.

keyboardmag.com/march2013

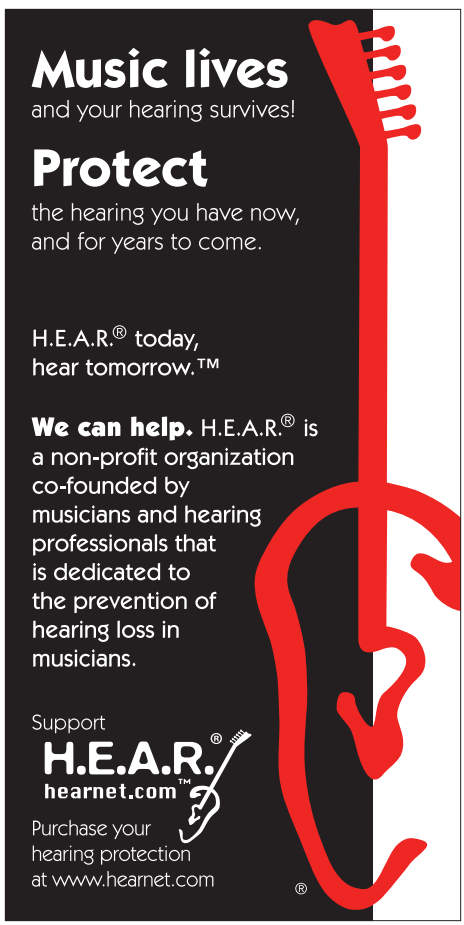

Fig. 1. Mr. Sax T hosted in Kontakt (Kontakt Player also works). The C next to a number denotes the MIDI CC controlling the parameter.

Samplemodeling

BY JERRY KOVARSKY

SAMPLING HAS PROGRESSED BY LEAPS AND BOUNDS SINCE THE '90s, allowing ever more realistic instrument emulations. Most real instruments have been well served by this progress, but a few have been difficult to recreate convincingly via sampling, and attempts at physically modeling them have fallen short of complete realism as well. At the top of that list is the sax family, followed by brass. Sampled *sections* are doing well, but the lone, exposed sax, trumpet, or trombone still reveals signs of being digital. Formed by renowned developer Peter Siedlaczek and Giorgio Tommasini (a cardiologist by day who has authored a number of papers about improving the realism of samples), Samplemodeling aims to change all that via advanced combining of sampling and modeling. Their product family at the time of this review includes The Trumpet, The Trombone, Mr. Sax A, Mr. Sax T, and Mr. Sax B (alto, tenor, and baritone, bundled as The Sax Brothers), Ms. Sax S (soprano), and French Horn & Tuba.

Keyboard K KEYBUY AWARD

Snap Judgment

PROS Amazingly realistic and expressive solo wind instruments. Easier to get realistic performances live than anything else we've tried.

CONS CPU-intensive. Too few presets per instrument.

The Problem

With most sampling engines, we can switch between many layers of recorded samples at different velocities, but we can't smoothly crossfade sustained notes in an overlapping fashion without phase artifacts and harmonic incongruities. This isn't a problem for struck and plucked instruments, but in any wind instrument it means that we can't fully recreate what happens as you increase and decrease the wind stream of a held note. A lot more changes timbrally than just amplitude, and synth filters can't realistically mimic these changes. Combine this with the fact that seemingly each note played on a sax sounds slightly different due to breath, embouchure, bite, fingering, and a host of other aspects, and you're at the heart of why these instruments are so elusive to reproduce.

The Technology

Samplemodeling's Harmonic Alignment technology can crossfade from *pp* to *ff*, and from no vibrato to vibrato, with continuity and without phase artifacts. All Samplemodeling instruments start with samples of every chromatic note of an instrument, recorded in an anechoic chamber at every dynamic and articulation. Samples are 24-bit, unlooped, and have a minimum duration of eight to ten seconds. From there, a number of adaptive modeling techniques are applied to capture what the company calls "the performance fingerprints of the real instrument." These include, but aren't limited to, convolution, advanced MIDI processing, and "modal resonance" modeling of the standing

frequencies of an instrument body, which change as different valves are opened and closed.

For the sax models, a technique the company calls Synchronous Wave Triggering (developed by Stefano Lucato) continuously interpolates among different vectors such as time, dynamics, pitch, and formant (vowel-like character of the sound). This allows things like constant-formant pitchbends, mixable sub-harmonics, and growl and flutter tongue techniques to be performed in real time.

Starting To Play

When you first load a Samplemodeling instrument, it tells you it needs to receive MIDI CC 11 (expression) before the instrument will play properly, even from the onscreen keyboard. So you'll also want a keyboard controller that has an input for an expression pedal—and that has pitch-bend and modulation controls and can shift octaves (or has at least 61 keys to avoid the need to). I understand the need for expression, as that's the "wind" beneath the wings of your playing, but I always encountered that speed bump every time I loaded a new instrument or family. It's easy enough to move your expression pedal, but I'd prefer to have to do it only once per session.

I then played a note on the Mr. Sax T. (tenor sax) instrument and moved the expression pedal. Sold! The way the sound could swell from a barely-played airy tone into a full-bodied bright timbre, then all the way to a "just before overblown" character by only sweeping the pedal was amazing. It took me a little while to get my playing to sound natural, as my first inclination was to accent each note with a pedal move, as with a wah-wah, rather than sweeping the pedal with the arc of a musical phrase or pushing a held note forward and then back. Not to mention adding vibrato to highlight held notes and ends of phrases. But after a short time, I got the hang of it.

Playing The Trumpet was equally inspiring. I appreciated how the vibrato seamlessly morphed from subtle and tasteful into a "shake" where you hear a distinct alternation between two pitches. The Trombone went from warm and murky to a powerful, "spitty" tone, and Mr. Sax B (baritone sax) had me moving from Gerry Mulligan jazz lines to Doc Kupka funk licks with only a few parameter changes.

Each Samplemodeling title gave me the same experience. Never before had I tried solo sax and brass sounds that came to life so naturally. I never felt like I was obviously switching a sample by touch, and I never felt like a filter was opening and closing on the same sampled sound. It had the fluid characteristic of playing a physically modeled instrument, but it sounded so *right* that I knew it had the accurate "snapshot" quality that sampling delivers—only with the snapshots transforming into each other in a way I've never experienced.

Fig. 2. Three different controller pages from Samplemodeling brass instruments, showing some of the available nuances and articulations.

Parameters

When hosted in Kontakt or Kontakt Player, Samplemodeling instruments offer pretty much the same parameters for determining how your playing interacts with the sound, so let's take a tour through the Mr. Sax T tenor sax (see **Figure 1**).

In the center are meters showing realtime velocity, expression level, vibrato depth, vibrato rate, and dynamic level. Below these are the settings for the various parameters the engine offers. These include: Master Tuning, Random Expression (a slight varying of the expression value for a more human effect), Controller Mode (keyboard, keyboard with breath controller, and two forms of wind controller), and a Dynamics-to-Pitch parameter, which slightly varies the pitch based on your expression level (harder blowing usually moves pitch sharper).

The third column of settings contains macros for how the attack is shaped: Enhanced Attack Hard, Smooth Attack Hard, Enhanced Attack Soft, and Smooth Attack Soft. These work by reading the velocity level of your new note and momentarily taking over from the current expression value (*i.e.*, where your pedal or breath controller is at) to produce different response shapes for the newly-played note. The note dynamic starts based on your played velocity and then ramps up or down to the current expression level, producing slight swells, or *sforzandos*, in a very musical fashion. The parameter below that is for what controller is used to modify portamento time.

Below that is Key Noise (KN), which works in a satisfyingly random fashion. Modal resonance was mentioned earlier, and varying it brings in what can best be described as an additional harmonic: You

don't notice it much until you get to higher levels, but when you take it away, you really miss it. Dial it in to taste. Pitch-bend (PB) mode can be asymmetrical (bends down but barely up, like the real instrument), or symmetrical (like on a synth).

The rightmost column starts with sustain pedal assignment, which can control the growl level, sub-harmonic level, or a slightly reduced velocity offset, but Samplemodeling recommends using a continuous controller (aftertouch is nice), not a simple switch. Next is the sub-harmonic level itself, then Touch Sub-harmonic (T.SH), which produces a short sub-harmonic burst at random note attacks, Then, there are the direct levels for growl and flutter, then pitch-bend range. Whew!

Brass are slightly different from saxes, offering control over a variety of mute choices and built-in early reflection impulse controls (see **Figure 2** on page 57). Recently, Samplemodeling has been developing their proprietary SWAM engine (Synchronous Wave Acoustic Modeling), which offers similar controls but, according to the company, is better under the hood for saxophone realism than Kontakt. The first title to offer it is their soprano sax, Ms. Sax S (see **Figure 3**).

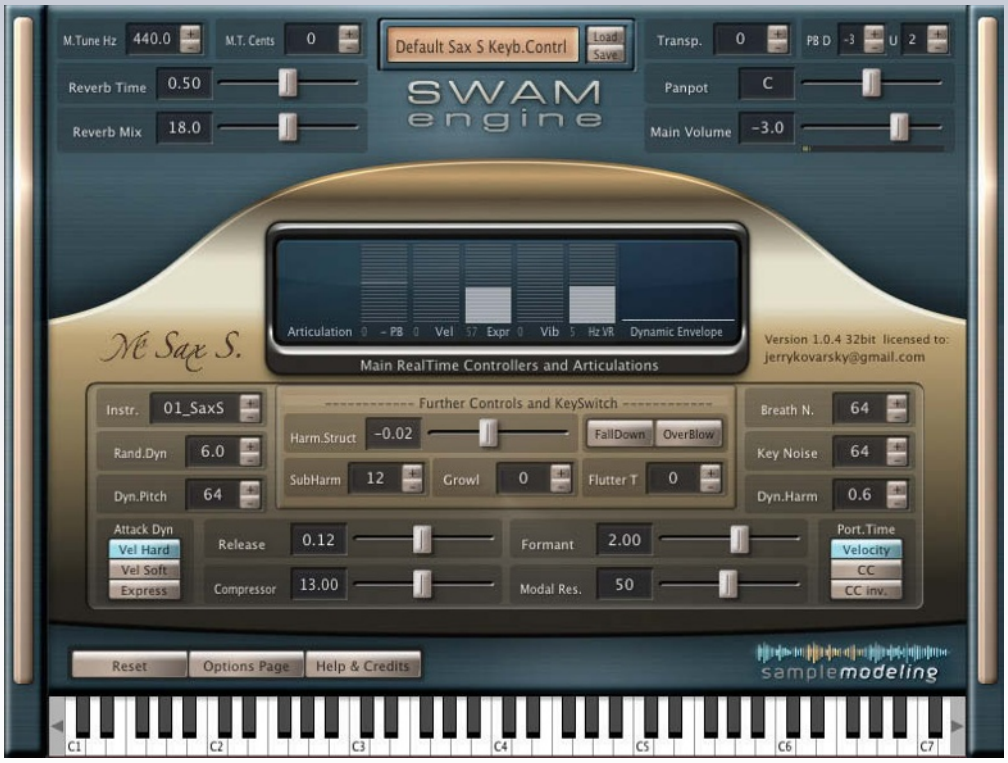

Fig. 3. Ms. Sax S, a soprano sax, has similar parameters to the other instruments but is the first to use Samplemodeling's custom sound engine instead of Kontakt.

Key-Switches

All the Samplemodeling brass instruments (The Trumpet, The Trombone, and French Horn & Tuba) offer key-switching, which can affect the next note played, the currently sounding note, or what happens at note release. Articulations include accents, crescendos, transient vibrato, short swells, slight vibrato at note release, and fall-offs. The intensity of the effects is usually tied to the velocity of the key-switch trigger itself—for example, the speed and length of the fall-off is tied to how hard you press MIDI note *B1*. This is a wonderfully expressive way to play. I suggest you add a MIDI pedalboard—such as Keith McMillen's 12-Step (reviewed Apr. '12)— freeing up your hands.

Conclusions

In the studio, first you concentrate on playing the right notes, then you go back and add controllers to enhance realism. Live, though, it's normally very hard to "play" all the requisite controllers in real time. Even using just velocity, pitch-bend, the modulation wheel, expression, and aftertouch, Samplemodeling instruments far outperform most solo instrument libraries I've ever tried—making them ideal for live performance.

Is there room for improvement? In some areas, yes. First, I'd like more presets for each instrument. Samplemodeling has given you each instrument in a single, natural presentation, assuming you'll develop the sound as you play. But I see no harm in rolling say, a dozen presets per title instrument to hook you on the possibilities.

Next, I'd like to see a built-in modulation matrix, as is common in soft synths, so a single controller could be routed to more than one parameter in varying amounts. True, this isn't needed for "pure" performances, and certainly not when sequencing, but it could add greatly to the live playing experience.

Last, all the instruments have been recorded and voiced with a tasteful film and orchestral leaning. I did get more aggressive tones from them, but I'd love to see some additional sample sets based on stronger jazz, funk, and rock "attitudes." None of these are failings of the current offerings, just suggestions for a way to expand the palette for the future.

I barely scratched the surface of all that these instruments offer, and I strongly suggest you watch and listen to the many demos on their website. The Samplemodeling instruments are a new benchmark of realism and expression for solo wind instruments, and I had a blast playing them all. Note that these are monophonic: You can load multiple instances to create sections, but you can't just play block chords on a keyboard. So don't look to them for recording pop brass and big-band sections in a single pass—there are other libraries for that. But what they do, they do like *nothing* I've ever experienced. These are breakthrough instruments that have raised the bar, and clearly Key Buy winners.

Bottom Line

Samplemodeling has created nothing less than a new standard in realism and expressiveness for solo brass and wind instruments. This is the future.

The Trumpet, The Trombone, French Horn & Tuba: $194 each | Ms. Sax S: $155 | The Sax Brothers: $311 | larger bundles available at discount*
samplemodeling.com

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Keyboard K KEYBUY AWARD

XLN AUDIO

Addictive Keys

BY MARTY CUTLER

THERE ARE PROBABLY MORE VIRTUAL PIANOS THAN ANY OTHER SOFTWARE instrument. One reason for such a surfeit of pianos is that no two people agree on what constitutes the perfect piano. Then, there's the question of what you're looking for—a grand or upright acoustic, or specific electric such as a Wurlitzer or Rhodes? Finally, how is the piano treated—are effects available, and so on? Addictive Keys seems to claim that you can have it all, and the execution—especially given its low price—makes us think that just maybe, you can.

Overview

Available as a download, Addictive Keys offers a standalone version and supports AU, VST and, RTAS plug-in formats. The sound library can be purchased individually, comprising three main instruments: Grand Piano (Steinway D), Upright (Yamaha U3), and Rhodes Mark I, but you'll be surprised by the depth and breadth of timbres issuing from the three basic instruments. This is largely due to a respectable and well-applied synthesis and effects engine, but also because of the inclusion of many keyboard artifacts. Aided by a well thought out user interface, the results can range from subtle to drastic.

Addictive Keys hosts roughly 3.6GB of samples. The acoustic pianos are about 1.6 and 1.25GB, respectively, with the Rhodes weighing in at 930MB. Although that's nowhere near the multi-gigabyte instruments available today, you wouldn't guess that from hearing them. These are lively, playable instruments with natural decays that respond realistically to dynamics. There are no end-of-loop artifacts, and though the documentation doesn't make clear how many velocity levels the samples use, it sounds as if there's sufficient range, as a cursory glance showed that most of the grand piano patches had the filter disabled, the filters being reserved for more obviously synthetic patches.

Snap Judgment

PROS Great basic piano and EP sounds with plenty of variations. Elegant user interface encourages programming. Patches load quickly.

CONS Modulation routings and automation assignments are global, with a limited choice of destinations.

Addictive Keys' editing screen offers mic and amp modeling, EQ, a phaser, and synth-like filters and envelopes.

Bottom Line

An outstanding value in a one-stop-shop virtual instrument for acoustic piano and Rhodes.

$179 list | $149 street | xlnaudio.com

User Interface

Addictive Keys is easy on the eye, and facilitates a number of ways to sort through and choose patches. When you first launch it, you're in the Gallery section, with the default "Studio Grand" loaded. Left and right arrows navigate to each of the three piano types, and below, icons in the ExploreMaps section lets you click through variations. Quick-edit knobs for customizing the timbre let you carve out what you need in a hurry. At the top left of the instrument's header is a Memo button, which lets you record MIDI data that you can later drop into a track in your DAW: a nice touch. Sample loading is smooth and remarkably swift.

Deeper Editing

At the top left of the acoustic instruments are controls for tweaking the strength of the soft pedal, pedal noise, and the amount of body resonance and noise. If you need to restrict the timbre of the instrument, you can scale the instrument's velocity switching response, limiting the timbre to one layer if need be.

Controls for pitch, filter, and volume show up under tabs on the upper right of the edit screen, with controls for pitch exposed as a default. There's no global transposition; instead, you can transpose up or down an octave on a per-patch basis. A Dissonance knob can alter pitches randomly from very subtle variances well into experimental territories.

A common programmer's trick to create brighter or warmer instruments is to move the root pitch of a sample up or down, and the Sample Shift knob can add overall brilliance or darkness to the piano quickly. You may not think you'll need vibrato or a pitch envelope for a piano [*Josef Zawinul might disagree. —Ed.*], but this is, after all, a synth; extreme vibrato added a gritty front end, and rapid pitch envelopes added cool clicks to the attack.

If you want to change the overall tonal quality, click on the Filter tab. You get a choice of a lowpass, highpass, or bandpass types. You can defeat or invert the filter envelope, scale the response over the range of the keyboard, adjust resonance, and set the envelope's velocity response, all of which—combined with the envelope's five rates and four levels—can take the otherwise unalloyed piano tone deep into synth territory (listen to Audio Clip 1 online).

Each instrument was sampled though multiple mics in close and other perspectives. The Rhodes includes a line out, a direct box, and an amp, in addition to several mic perspectives. You can't alter mic distances, although you can alter levels and effects sends of individual mics, which can achieve similar results. Addictive Keys also lets you mix in ambient noise ranging from mic self-noise to DC hum to the fuzz of an Electro-Harmonix Muff stompbox. The tweakage ensues with three-band EQ and a small set of selectable effects processors, including chorus, phase, and the oddly named Delerb, which proves to be a hybrid of reverb and delay whose reflections are continuously variable from one to the other. Modulation effects can sync to tempo.

Finally, the Session Settings page provides access to global parameters, including a wide range of selectable tunings, with a stretch-tuning knob. This is where you set modulation and automation sources, which apply to a limited batch of parameters, such as filter cutoff.

Sounds

The acoustic pianos shine, and there are variations suitable for practically any musical genre. The "Studio Grand" preset will serve well solo or behind ballads. The enhanced brilliance of "Intense Keys" offers a more cutting tone better suited for ensemble jazz than the mellower "Jazzish." Upright pianos are more in-your-face, with a sweeping resonant decay. Some of the synth patches here are standouts; my favorite is "Woody Pizzicato," which suggests a hybrid of piano and acoustic bass, and makes a wonderful, if unorthodox clavinet (Audio Clip 2).

My first impression of the Rhodes presets was that they were a trifle bland, but some judicious tweaking proved otherwise. "Vibrotwin," for example, is clearly an attempt at producing a dirty, Wurly-like tone from the Rhodes, and if you're not a purist, its gritty, square-wavy sound can carry the day, particularly in the low to midrange frequencies (Audio Clip 3).

Conclusions

There's a lot to recommend Addictive Keys. In addition to its overall sonic excellence, the wide array of timbres and perspectives make it easy to fit into almost any mix, the patch loading is swift, and the engine is efficient and stable. The interface is gorgeous, and the price is right. If your sound library needs a piano or 20, check Addictive Keys out. ♫

SOUNDCLOUD Original audio examples.

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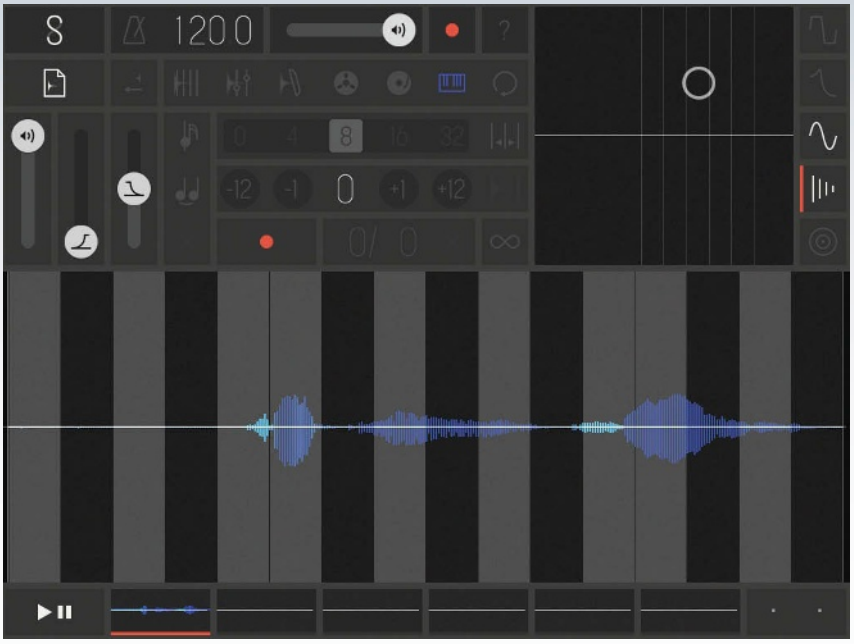

Samplr

BY FRANCIS PRÈVE

THERE'S A NEW KID ON THE BLOCK WHEN IT COMES TO LIVE PERFORMANCE-oriented samplers for the iPad. Designed by Marcos Alonso and aptly named "Samplr," this app cribs the design aesthetic from Teenage Engineering's oh-so-cultish OP-1, melds it with a broad array of sample manipulation tools, and delivers a user experience that's both quirky and intuitive.

Samplr's seven performance modes cover a *lot* of sonic ground, since each mode is extremely "playable" regardless of your experience level. Here's an aerial view of the engine:

Slicer works like Propellerhead ReCycle, breaking your sample into rhythmic chunks based on a grid that ranges from quarter-notes to 32nd-notes—or user-editable slices of any size.

Looper lets you adjust multiple audio loops, from the same sample, in real time. All loop points and volume are controlled via multi-touch, so the more fingers, the merrier.

Ebow (my personal favorite) allows you to define a loop length, including very small loops, then scrub that loop in any direction over the sample. The end result is evocative of '90s-era time-stretching, especially when used with vocals.

Tape mode provides control over the playback speed of the loop via the horizontal axis, both forward and backward.

Scratch mode—another really cool and playable feature—does exactly what its name says, letting you scrub and scratch the sample with your finger. Between Tape and Scratch, your "analog" bases are well covered.

The final two modes—Keyboard and Loop Player—work more traditionally, with their names indicative of their features.

Samplr's effects include Korg Kaoss-style implementations of essential processing tools like distortion, filter, amplitude modulation, delay and reverb, all of which are nicely implemented and do the trick.

Since its initial version 1.0 release late last year (this review was first based on 1.0, then updated to reflect 1.2), Samplr has grown by leaps and bounds. The most notable addition is Audiobus support, which means that Samplr can be integrated into complex inter-app iOS setups. What's more, the developers added the ability to record your own audio directly into the app via the iPad mic or resampling its own output. They also assure us that CoreMIDI connectivity for external keyboard controllers and such is "top priority" for the next update, so it's obvious they're paying close attention to their customers' requests.

All in all, Samplr is shaping up to be an impressive sampling resource for the iPad. While we still love Jordan Rudess' SampleWiz (reviewed Aug. '12) for its fun features and CoreMIDI support, Samplr is a very cool companion app that will clearly appeal to audio tweakheads.

Snap Judgment

PROS Seven performance-oriented sampling modes. Intuitive interface lets you manipulate audio data by touching it. Interactive effects make great use of multi-touch. Audiobus support.

CONS No CoreMIDI support at this time—but it's on the way.

Bottom Line

A unique approach to sampling that makes great use of multi-touch.

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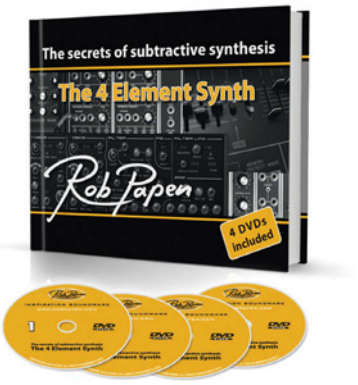

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5 THINGS I'VE LEARNED ABOUT Playing in a Tribute Band

BY RICK RUBIN

WE STARTED THE STEELY DAN TRIBUTE BAND KING OF THE WORLD NOT ONLY because we love the music, but because playing this catalog lets us stretch our jazz legs while maintaining all the fun and energy of a rock show. Here are some things I've learned that I hope will help you succeed in your cover or tribute band.

1. Make Sure You're Heard

Keyboards are notoriously low in live mixes. Since they're the foundation of Steely Dan's music, it's even more important that I'm heard. I'm battling a monster guitar player and four horns, so I need presence and power. The solution is to always run through the house, always be up in the monitors, and always have additional stage power. My secret weapon is the QSC K10 powered speaker, which I plop on stage right next to me. It captures the full frequency spectrum, pushes 1,000 watts, and at 30 pounds is highly portable.

2. Riffs and Voicings

If something is iconic, be it a single note or an extended solo, play it! I'll play the synth noodle on the outro to "Hey Nineteen" almost note for note. Likewise for chord voicings, which anchor a tune. Bad, blocky voicings will make a song sound amateurish and shoddy, so learn them like they were played on the record.

3. Keep It Fresh

Cover bands have to play what people want to hear, but you can change sets, rotate in new tunes, add solo sections, and devise creative endings and cool segues. We let the horn section go crazy at the end of "Green Earrings" and even threw a trombone solo in "Josie" at our last show. "Black Friday" and "Home At Last" share similar tempos, making for a great segue. Or, how about using the *Cmaj7-G/B* bass motion of "Peg" to land instead on *Bmaj7*, the opening chord of "Aja"?

4. Learn To Arrange

Even though keyboards can cover multiple parts and sounds, sometimes you can't do everything. In "Haitian Divorce," piano and vibes are throughout, yet there are also some really cool pads in the second and third verses. We wanted to include them so I transcribed them for our horn section, which gave the tune a new dimension. Always maximize your band's instrumentation.

5. Know Your Audience

Are they die-hard fans of the original band? Casual fans of your band? Friends? Regulars at the venue? We once tried "Here at the Western World," a song known by Steely Dan fans but few others, at a rock club on Long Island. Half the people went for a smoke break—I rest my case. Some acts, such as Super Diamond, also venture outside their tributee's repertoire (Neil Diamond in case you hadn't guessed) when called for, especially in the final set of the night. ♫

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